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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Docket@splglaw.com

Office Action Summary

Application No.

10/829,417

Applicant(s)

SKINNER, JOHN V.

Examiner

EVRAL BODDEN

Art Unit

2192

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on September 29th, 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 12-81 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12-81 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/GS/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This action is in response to the following communication: Amendment to application No. 10/829,417 filed September 29th, 2009.
2. **Claim 11** have been cancelled.
Claims 1-10, and **12-81** now remain pending.
Claims 1, 8, 13, 16, 20, 23, 26, 28, 31, 34, 57, 62, 64, and 78 are independent claims.

Claim Rejections - 35 USC § 112

3. Prior objection is overcome by corrections.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 26 and 27 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 26 recites a "high-level language system... comprising an apparatus operable to parse... an apparatus operable to initialize ... an apparatus operable to start ... an apparatus operable to end ... an apparatus operable to attach ... an apparatus operable to repeat ... an apparatus operable to write means for writing... ... an apparatus operable to fill", that has been reasonably interpreted as a computer program, software, listing per se (see Fig. 7, Fig. 8, and paragraph [0072], lines 1 of the specification). Claim 26 fails to recite a "high-level language system... comprising an apparatus operable to parse... an apparatus operable to initialize ... an apparatus

operable to start ... an apparatus operable to end ... an apparatus operable to attach ...
an apparatus operable to repeat ... an apparatus operable to write means for writing...
... an apparatus operable to fill" as stored on an appropriate computer readable
medium, which defines structural and functional interrelationships between the software
and other components of a computer that permit the software's functionality to be
realized – see MPEP 2106.01(I). Therefore, claim 26 is rejected as non-statutory.

Claim 27 does not remedy the deficiencies of claim 26, and is also rejected as
non-statutory.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that
form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –
(e) the invention was described in (1) an application for patent, published under section 122(b), by
another filed in the United States before the invention by the applicant for patent or (2) a patent
granted on an application for patent by another filed in the United States before the invention by the
applicant for patent, except that an international application filed under the treaty defined in section
351(a) shall have the effects for purposes of this subsection of an application filed in the United States
only if the international application designated the United States and was published under Article 21(2)
of such treaty in the English language.

6. **Claims 75, and 78-81** are rejected under 35 U.S.C. 102(e) as being anticipated
by Yamamoto, US 2005/0198202.

In regards to **claim 75**, Yamamoto teaches:

a processor; and an encapsulation of image annotation computer instructions, the
computer instructions being native to the processor, the computer instructions being
generated by a processor on another apparatus (Fig. 1, #40 bi-directional arrows from
#10 Web server to multiple clients, #50 Clients), (p. 2,[0022], lines 1 – 8, see The use of
conventional software for an annotation function allows one computer, which uses the

same type of software for the annotation function that has been used by another computer for attaching an annotation to an electronic document, to display the electronic document with the attached annotation on the display screen and allows a user of the one computer to view the electronic document with the attached annotation), and (p. 2, [0024], lines 1 – 5, see an object of the present invention is to provide a method for causing a server to provide a plurality of client computers with annotation functions, thereby to allow users of the client computers to communicate with each other using annotations).

In regards to **claim 78**, Yamamoto teaches:

- updating a medical imaging system with new annotation calculations, the method comprising: receiving an image annotation executable that includes computer instructions of the new annotation calculations that are native to a processor of the medical imaging system (p. 4, [0070], lines 2 – 13, see upon receiving the request previously handled by the step c3, one of sets of viewing information stored on the server 10 which corresponds to the selected name, and then transmits the selected set of viewing information to the client computer 50. The set of viewing information includes: a) document information representing a selected file (document) in a format viewable in the Web browser (e.g., a Hyper-Text Mark-up Language (HTML) file); b) annotation information representing annotations in a format viewable in the Web browser (e.g., an HTML file); and c) a script for allocating the annotations to the file (document) (e.g., a JavaScript)).

- storing the image annotation executable in a location that is accessible to a viewer that is enabled to access the image annotation executable (p. 4, [0070], lines 2 – 13, see upon receiving the request previously handled by the step c3, one of sets of viewing information stored on the server 10 which corresponds to the selected name, and then transmits the selected set of viewing information to the client computer 50. The set of viewing information includes: a) document information representing a selected file (document) in a format viewable in the Web browser (e.g., a Hyper-Text Mark-up Language (HTML) file); b) annotation information representing annotations in a format viewable in the Web browser (e.g., an HTML file); and c) a script for allocating the annotations to the file (document) (e.g., a JavaScript)).

In regards to **claim 79**, Yamamoto teaches:

receiving the image annotation executable from a manufacturer of the medical imaging system (p. 4, [0070], lines 2 – 13, see upon receiving the request previously handled by the step c3, one of sets of viewing information stored on the server 10 which corresponds to the selected name, and then transmits the selected set of viewing information to the client computer 50. The set of viewing information includes: a) document information representing a selected file (document) in a format viewable in the Web browser (e.g., a Hyper-Text Mark-up Language (HTML) file); b) annotation information representing annotations in a format viewable in the Web browser (e.g., an

HTML file); and c) a script for allocating the annotations to the file (document) (e.g., a JavaScript)).

In regards to **claim 80**, Yamamoto teaches:

the medical imaging system further comprises a computer tomography medical imaging system (p. 4, [0070], lines 2 – 13, see upon receiving the request previously handled by the step c3, one of sets of viewing information stored on the server 10 which corresponds to the selected name, and then transmits the selected set of viewing information to the client computer 50. The set of viewing information includes: a) document information representing a selected file (document) in a format viewable in the Web browser (e.g., a Hyper-Text Mark-up Language (HTML) file); b) annotation information representing annotations in a format viewable in the Web browser (e.g., an HTML file); and c) a script for allocating the annotations to the file (document) (e.g., a JavaScript)).

In regards to **claim 81**, Yamamoto teaches:

the medical imaging system further comprises a magnetic imaging medical imaging system (p. 4, [0070], lines 2 – 13, see upon receiving the request previously handled by the step c3, one of sets of viewing information stored on the server 10 which corresponds to the selected name, and then transmits the selected set of viewing information to the client computer 50. The set of viewing information includes: a) document information representing a selected file (document) in a format viewable in

the Web browser (e.g., a Hyper-Text Mark-up Language (HTML) file); b) annotation information representing annotations in a format viewable in the Web browser (e.g., an HTML file); and c) a script for allocating the annotations to the file (document) (e.g., a JavaScript)).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claims 1-10, 12-25, 51-55, 59-61, 64--69 and 77** are rejected under 35 U.S.C. 103(a) as being unpatentable over Jain et al., US 2002/0073091 (hereinafter Jain), in view of Goede et al., US 2006/0061595 (hereinafter Goede), in further view of Yamamoto.

In regards to claim **64**, the rejections above are incorporated, respectively.

In regards to **claim 1**, Jain teaches:

- a compiler operably coupled to the translator, the compiler being operable to receive the image annotation source code and to compile the source code into an image annotation executable (Fig. 1, #104 XML DTD, #108 XML_To_JAVA, #110 Java Class, #112 Java Class File, #120 Program, #124 Java Object), and (p. 1, [0011-0012], see Techniques are disclosed for converting an XML document to an object in an object-oriented language, thereby providing a

structured, programmatic, consistent, powerful, and in-memory method for accessing the data in the XML document... In one embodiment, a translation tool converts an XML DTD associated with the XML document to Java classes from which a Java object corresponding to the XML document is instantiated).

- a translator (Fig. 1, note arrow from #104 to #108, and arrow from #102 to #120), and (p. 1, [0003], lines 1 – 6, see A Document Type Definition file ("DTD") associated with an XML document defines how the mark up tags within the document should be interpreted by the application presenting the document. The HTML specification that defines how Web pages should be displayed by Web browsers is one example of a DTD).

Jain doesn't explicitly teach

- that is operable to receive a non-procedural image annotation template to enable text to be embedded on a medical image.

However, Goede teaches such use (abstract, lines 1 – 6, see a method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

- adapted to be installed on a medical imaging system to enable the medical image including the embedded text to be viewed.

However, Goede teaches such use (p. 8, [0085], see the deductor (160) is machine process that may or may not be aided by human user input to analyze and deduce new

visual and non-visual information from the pre-existing annotated information using a set of defined rules in the illustrative embodiments of the present invention...In the case of a medical image, the deductor (160) may create output that could be read and be integrated into an existing system for cell analysis. The deductor (160) could also create output that is read and applied to a template in a publishing process), and (abstract, lines 1 – 6, see a method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

Jain and Goede are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, and Goede before him or her, to modify the system of Jain to include the teachings of Goede, as a method and system for visually annotating an image, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to define the requirements of a digital non raster-based annotation architecture and annotating methodology for digital images that will serve as a basis for use in a number of exemplary areas: authoring tools, presentation programs, and cataloging systems, as suggested by Goede (P.3, [0035], lines 2 - 6).

Jain and Goede, in particular Jain doesn't explicitly teach:

- the translator being operable to translate the non-procedural image annotation template to image annotation source code.

However, Yamamoto teaches such use(p. 4, [0070], lines 6 – 13, “the set of viewing information includes: a) document information representing a selected file (document) in a format viewable in the Web browser (e.g., a Hyper-Text Mark-up Language (HTML) file); b) annotation information representing annotations in a format viewable in the Web browser (e.g., an HTML file); and c) a script for allocating the annotations to the file (document) (e.g., a JavaScript)”). Examiner notes that a “JavaScript and HTML file” which contains “annotation information representing annotations in a format viewable in the Web browser” are “non-procedural image annotation template”, and although the exact nomenclature isn't used, the functionality is very much the same as Applicant's now claimed invention.

Jain, Goede, and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, Goede, and Yamamoto before him or her, to modify the system of Jain and Goede, in particular Jain, to include the teachings of Yamamoto, as providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an

XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

In regards to **claim 2**, Jain and Goede, in particular Jain doesn't explicitly teach:

- the non-procedural image annotation template further comprises a mixture of XML and conventional numerical expressions based on C language syntax

However Yamamoto teaches such use (p. 9, [0148], lines 10 – 12, see The JX-model refers to a model of an XML repository of a Java source program), and (p. 11, [0183], lines 1 – 8, see While the system 1 has been described above with respect to the case where a document to be annotated is a Java source program, the system 1, which allows information to be shared and exchanged using annotations, may also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like).

Jain, Goede, and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, Goede, and Yamamoto before him or her, to modify the system of Jain and Goede, in particular Jain, to include the

teachings of Yamamoto, as providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, and accordingly it would enhance the system of Jain, which is focused on a translation tool to convert an XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

In regards to **claim 3**, Jain and Goede, in particular Jain doesn't explicitly teach:

- the image annotation executable further comprises an annotation presentation description.

However Yamamoto teaches such use (p. 4, [0070], lines 6 – 13, see The set of viewing information includes: a) document information representing a selected file (document) in a format viewable in the Web browser (e.g., a Hyper-Text Mark-up Language (HTML) file); b) annotation information representing annotations in a format viewable in the Web browser (e.g., an HTML file); and c) a script for allocating the annotations to the file (document) (e.g., a JavaScript)).

Jain, Goede, and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of

ordinary skill in the art, having the teaching of Jain, Goede, and Yamamoto before him or her, to modify the system of Jain and Goede, in particular Jain, to include the teachings of Yamamoto, as providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

In regards to **claim 4**, Jain teaches:

- an iterator object for an expression tree of the non-procedural image annotation template (Fig. 2, Fig. 3).
- a lexical analyzer of the procedural image annotation template (Fig. 1, #104 XML DTD, #108 XML_To_JAVA, #110 Java Class, #112 Java Class File, #120 Program, #124 Java Object), and (p. 1,[0011-0012], see Techniques are disclosed for converting an XML document to an object in an object-oriented language, thereby providing a structured, programmatic, consistent, powerful, and in-memory method for accessing the data in the XML document... In one embodiment, a translation tool converts an XML DTD associated with the XML

document to Java classes from which a Java object corresponding to the XML document is instantiated).

In regards to **claim 5**, Jain teaches:

the image annotation source code further comprises an object-oriented image annotation source code and the compiler further comprises an object-oriented compiler (Fig. 1, #104 XML DTD, #108 XML_To_JAVA, #110 Java Class, #112 Java Class File, #120 Program, #124 Java Object), and (p. 1,[0011-0012], see Techniques are disclosed for converting an XML document to an object in an object-oriented language, thereby providing a structured, programmatic, consistent, powerful, and in-memory method for accessing the data in the XML document... In one embodiment, a translation tool converts an XML DTD associated with the XML document to Java classes from which a Java object corresponding to the XML document is instantiated).

In regards to **claim 6**, Jain teaches:

- the object-oriented image annotation source code further comprises high-level language image annotation source code (Fig. 1, #104 XML DTD, #108 XML_To_JAVA, #110 Java Class, #112 Java Class File, #120 Program, #124 Java Object), and (p. 1,[0011-0012], see Techniques are disclosed for converting an XML document to an object in an object-oriented language, thereby providing a structured, programmatic, consistent, powerful, and in-memory method for accessing the data in the XML document... In one embodiment, a translation tool

converts an XML DTD associated with the XML document to Java classes from which a Java object corresponding to the XML document is instantiated).

- the object-oriented compiler further comprises a high-level language compiler (Fig. 1, #104 XML DTD, #108 XML_To_JAVA, #110 Java Class, #112 Java Class File, #120 Program, #124 Java Object), and (p. 1, [0011-0012], see Techniques are disclosed for converting an XML document to an object in an object-oriented language, thereby providing a structured, programmatic, consistent, powerful, and in-memory method for accessing the data in the XML document... In one embodiment, a translation tool converts an XML DTD associated with the XML document to Java classes from which a Java object corresponding to the XML document is instantiated).

In regards to **claim 7**, Jain doesn't explicitly teach:

- the image annotation executable further comprises instructions that are native to a processor of a medical imaging system.

However Goede teaches such use (Fig. 6, and P. 7, [0077], lines 1 – 13, see FIG. 6 is a diagram showing the data flow carried out in accordance with an illustrative embodiment of the present invention. The first step is to extract the image data...Digital information can also consist of color settings, grayscale levels, image pixel dimensions, or the type of image the user is requesting, i.e., TIF, JPEG, DICOM, etc.), and (p. 5, [0056], lines 9 – 13, see The metadata may also include patient information in the case of medical images), (abstract, lines 1 – 6, see A method and system for visually annotating an

image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

Jain and Goede are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, and Goede before him or her, to modify the system of Jain to include the teachings of Goede, as a method and system for visually annotating an image, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to define the requirements of a digital non raster-based annotation architecture and annotating methodology for digital images that will serve as a basis for use in a number of exemplary areas: authoring tools, presentation programs, and cataloging systems, as suggested by Goede (P.3, [0035], lines 2 - 6).

In regards to **claim 8**, Jain teaches:

- executable from a non-procedural image annotation template to annotate images, the executable instructions capable of directing a processor to perform(Fig. 1, #104 XML DTD, #108 XML_To_JAVA, #110 Java Class, #112

Java Class File, #120 Program, #124 Java Object), and (p. 1,[0011-0012], see Techniques are disclosed for converting an XML document to an object in an object-oriented language, thereby providing a structured, programmatic, consistent, powerful, and in-memory method for accessing the data in the XML document... In one embodiment, a translation tool converts an XML DTD associated with the XML document to Java classes from which a Java object corresponding to the XML document is instantiated).

- translating the non-procedural image annotation template to image annotation source code (Fig. 1, #104 XML DTD, #108 XML_To_JAVA, #110 Java Class, #112 Java Class File, #120 Program, #124 Java Object), and (p. 1,[0011-0012], see Techniques are disclosed for converting an XML document to an object in an object-oriented language, thereby providing a structured, programmatic, consistent, powerful, and in-memory method for accessing the data in the XML document... In one embodiment, a translation tool converts an XML DTD associated with the XML document to Java classes from which a Java object corresponding to the XML document is instantiated).
- compiling the image annotation source code into an image annotation executable (Fig. 1, #104 XML DTD, #108 XML_To_JAVA, #110 Java Class, #112 Java Class File, #120 Program, #124 Java Object), and (p. 1,[0011-0012], see Techniques are disclosed for converting an XML document to an object in an object-oriented language, thereby providing a structured, programmatic, consistent, powerful, and in-memory method for accessing the data in the XML

document... In one embodiment, a translation tool converts an XML DTD associated with the XML document to Java classes from which a Java object corresponding to the XML document is instantiated).

Jain doesn't explicitly teach

- generate a medical image annotation.

However Goede teaches such use (p. 8, [0085], see the deductor (160) is machine process that may or may not be aided by human user input to analyze and deduce new visual and non-visual information from the pre-existing annotated information using a set of defined rules in the illustrative embodiments of the present invention...In the case of a medical image, the deductor (160) may create output that could be read and be integrated into an existing system for cell analysis. The deductor (160) could also create output that is read and applied to a template in a publishing process), and (abstract, lines 1 – 6, see a method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

- to annotate a medical image with embedded text.

However Goede teaches such use (abstract, lines 1 – 6, see a method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

- to enable a medical imaging system to annotate the medical image with embedded text.

However Goede teaches such use (abstract, lines 1 – 6, see a method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

Jain and Goede are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, and Goede before him or her, to modify the system of Jain to include the teachings of Goede, as a method and system for visually annotating an image, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to define the requirements of a digital non raster-based annotation architecture and annotating methodology for digital images that will serve as a basis for use in a number of exemplary areas: authoring tools, presentation programs, and cataloging systems, as suggested by Goede (P.3, [0035], lines 2 - 6).

Jain and Goede, in particular Jain doesn't explicitly teach:

- the procedural image annotation source code comprises procedural expression of the calculations and operations.

However Yamamoto teaches such use p. 2, [0026 – 0030], see allows a user of the client computer to view a document with an attached annotation on a screen of the client computer...The viewing information includes document information, annotation information, and a script...The aforementioned annotation information represents the annotation in a format that allows the user to view the annotation by the Web browser. More particularly, the annotation information includes position information defining a position that the annotation is to be displayed by the Web browser with the annotation being attached to the document in association with a corresponding one of the plurality of objects...The aforementioned script is to be executed by the client computer for allocating the annotation to the document...The "annotation" may be achieved by displaying a particular comment or note at a particular position on a target document, by underlining, emphasizing, highlighting, coloring, or enclosing a particular portion of a target document, etc.).

- non-procedural image annotation template comprises non-procedural expression of calculations and operations.

However Yamamoto teaches such use p. 2, [0026 – 0030], see allows a user of the client computer to view a document with an attached annotation on a screen of the client computer...The viewing information includes document information, annotation information, and a script...The aforementioned annotation information represents the annotation in a format that allows the user to view the annotation by the Web browser.

More particularly, the annotation information includes position information defining a position that the annotation is to be displayed by the Web browser with the annotation being attached to the document in association with a corresponding one of the plurality of objects...The aforementioned script is to be executed by the client computer for allocating the annotation to the document...The "annotation" may be achieved by displaying a particular comment or note at a particular position on a target document, by underlining, emphasizing, highlighting, coloring, or enclosing a particular portion of a target document, etc.).

Jain, Goede, and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, Goede, and Yamamoto before him or her, to modify the system of Jain and Goede, in particular Jain, to include the teachings of Yamamoto, as providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

In regards to **claim 9**, Jain doesn't explicitly teach:

- the compiling further comprises: targeting the compiling to an instruction set of a processor of an imaging system.

However Goede teaches such use (Fig. 6, and P. 7, [0077], lines 1 – 13, see FIG. 6 is a diagram showing the data flow carried out in accordance with an illustrative embodiment of the present invention. The first step is to extract the image data...Digital information can also consist of color settings, grayscale levels, image pixel dimensions, or the type of image the user is requesting, i.e., TIF, JPEG, DICOM, etc.), and (p. 5, [0056], lines 9 – 13, see The metadata may also include patient information in the case of medical images), (abstract, lines 1 – 6, see A method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

Jain and Goede are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, and Goede before him or her, to modify the system of Jain to include the teachings of Goede, as a method and system for visually annotating an image, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition

file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to define the requirements of a digital non raster-based annotation architecture and annotating methodology for digital images that will serve as a basis for use in a number of exemplary areas: authoring tools, presentation programs, and cataloging systems, as suggested by Goede (P.3, [0035], lines 2 - 6).

In regards to **claim 10**, Jain doesn't explicitly teach:

- transferring the image annotation executable to the medical imaging system system.

However Goede teaches such use (p. 8, [0085], see the deductor (160) is machine process that may or may not be aided by human user input to analyze and deduce new visual and non-visual information from the pre-existing annotated information using a set of defined rules in the illustrative embodiments of the present invention...In the case of a medical image, the deductor (160) may create output that could be read and be integrated into an existing system for cell analysis. The deductor (160) could also create output that is read and applied to a template in a publishing process),

Jain and Goede are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, and Goede before him or her, to modify the system of Jain to include the teachings of Goede, as a method and system

for visually annotating an image, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to define the requirements of a digital non raster-based annotation architecture and annotating methodology for digital images that will serve as a basis for use in a number of exemplary areas: authoring tools, presentation programs, and cataloging systems, as suggested by Goede (P.3, [0035], lines 2 - 6).

In regards to **claim 12**, Jain doesn't explicitly teach:

- annotate the medical image with embedded text.

However, Goede teaches such use (abstract, lines 1 – 6, see a method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

Jain and Goede are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, and Goede before him or her, to modify the system of Jain to include the teachings of Goede, as a method and system for visually annotating an image, and accordingly it would enhance the system of Jain,

which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to define the requirements of a digital non raster-based annotation architecture and annotating methodology for digital images that will serve as a basis for use in a number of exemplary areas: authoring tools, presentation programs, and cataloging systems, as suggested by Goede (P.3, [0035], lines 2 - 6).

Jain and Goede, in particular Jain doesn't explicitly teach:

- the non-procedural image annotation template is written in a language that does not require procedural operations.

However, Yamamoto teaches such use (p. 2, [0026 – 0030], see allows a user of the client computer to view a document with an attached annotation on a screen of the client computer...The viewing information includes document information, annotation information, and a script...The aforementioned annotation information represents the annotation in a format that allows the user to view the annotation by the Web browser. More particularly, the annotation information includes position information defining a position that the annotation is to be displayed by the Web browser with the annotation being attached to the document in association with a corresponding one of the plurality of objects...The aforementioned script is to be executed by the client computer for allocating the annotation to the document...The "annotation" may be achieved by displaying a particular comment or note at a particular position on a target document, by

underlining, emphasizing, highlighting, coloring, or enclosing a particular portion of a target document, etc..).

- the procedural image annotation source code further comprises calculations and operations.

However, Yamamoto teaches such use (p. 2, [0026 – 0030], see allows a user of the client computer to view a document with an attached annotation on a screen of the client computer...The viewing information includes document information, annotation information, and a script...The aforementioned annotation information represents the annotation in a format that allows the user to view the annotation by the Web browser. More particularly, the annotation information includes position information defining a position that the annotation is to be displayed by the Web browser with the annotation being attached to the document in association with a corresponding one of the plurality of objects...The aforementioned script is to be executed by the client computer for allocating the annotation to the document...The "annotation" may be achieved by displaying a particular comment or note at a particular position on a target document, by underlining, emphasizing, highlighting, coloring, or enclosing a particular portion of a target document, etc..).

Jain, Goede, and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, Goede, and Yamamoto before him or her, to modify the system of Jain and Goede, in particular Jain, to include the

teachings of Yamamoto, as providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, and accordingly it would enhance the system of Jain, which is focused on a translation tool to convert an XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

In regards to **claim 13**, Jain teaches:

- translate the non-procedural image annotation template to image annotation source code (Fig. 1, #104 XML DTD, #108 XML_To_JAVA, #110 Java Class, #112 Java Class File, #120 Program, #124 Java Object), and (p. 1, [0011-0012], see Techniques are disclosed for converting an XML document to an object in an object-oriented language, thereby providing a structured, programmatic, consistent, powerful, and in-memory method for accessing the data in the XML document... In one embodiment, a translation tool converts an XML DTD associated with the XML document to Java classes from which a Java object corresponding to the XML document is instantiated).
- compile the image annotation source code into a medical image annotation executable, to an instruction set of a processor of a medical imaging system

(Fig. 1, #104 XML DTD, #108 XML_To_JAVA, #110 Java Class, #112 Java Class File, #120 Program, #124 Java Object), and (p. 1,[0011-0012], see Techniques are disclosed for converting an XML document to an object in an object-oriented language, thereby providing a structured, programmatic, consistent, powerful, and in-memory method for accessing the data in the XML document... In one embodiment, a translation tool converts an XML DTD associated with the XML document to Java classes from which a Java object corresponding to the XML document is instantiated).

- apparatus operable to compile the image annotation source code (Fig. 1, #104 XML DTD, #108 XML_To_JAVA, #110 Java Class, #112 Java Class File, #120 Program, #124 Java Object), and (p. 1,[0011-0012], see Techniques are disclosed for converting an XML document to an object in an object-oriented language, thereby providing a structured, programmatic, consistent, powerful, and in-memory method for accessing the data in the XML document... In one embodiment, a translation tool converts an XML DTD associated with the XML document to Java classes from which a Java object corresponding to the XML document is instantiated).

Jain doesn't explicitly teach

- to annotate a medical image with embedded text.

However, Goede teaches such use (abstract, lines 1 – 6, see a method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside

image information in a single, non-volatile and portable file or in a separate file from the image).

- to annotate the medical image with the embedded text.

However, Goede teaches such use (abstract, lines 1 – 6, see a method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

- into a medical image annotation executable, to an instruction set of a processor of a medical imaging system.

However, Goede teaches such use (p. 8, [0085], see the deductor (160) is machine process that may or may not be aided by human user input to analyze and deduce new visual and non-visual information from the pre-existing annotated information using a set of defined rules in the illustrative embodiments of the present invention...In the case of a medical image, the deductor (160) may create output that could be read and be integrated into an existing system for cell analysis. The deductor (160) could also create output that is read and applied to a template in a publishing process), and (abstract, lines 1 – 6, see a method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

Jain and Goede are analogous art because they are from the same field of

endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, and Goede before him or her, to modify the system of Jain to include the teachings of Goede, as a method and system for visually annotating an image, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to define the requirements of a digital non raster-based annotation architecture and annotating methodology for digital images that will serve as a basis for use in a number of exemplary areas: authoring tools, presentation programs, and cataloging systems, as suggested by Goede (P.3, [0035], lines 2 - 6).

Jain and Goede, in particular Jain doesn't explicitly teach:

- non-procedural image annotation template comprises non- procedural expression of calculations and operations.

However, Yamamoto teaches such use (p. 2, [0026 – 0030], see allows a user of the client computer to view a document with an attached annotation on a screen of the client computer...The viewing information includes document information, annotation information, and a script...The aforementioned annotation information represents the annotation in a format that allows the user to view the annotation by the Web browser. More particularly, the annotation information includes position information defining a position that the annotation is to be displayed by the Web browser with the annotation

being attached to the document in association with a corresponding one of the plurality of objects...The aforementioned script is to be executed by the client computer for allocating the annotation to the document...The "annotation" may be achieved by displaying a particular comment or note at a particular position on a target document, by underlining, emphasizing, highlighting, coloring, or enclosing a particular portion of a target document, etc.).

- the procedural image annotation source code comprises procedural expression of the calculations and operations.

However, Yamamoto teaches such use (Fig. 15 #15 a – h, and p. 4, [0075], lines 1 – 11, see In FIG. 15, an example of a set of variations of the displaying modes of annotation is illustrated. Annotation 58a which are displayed in the source-view frame 53b in the normal mode, each indicate a title section 58d, an object section 58e, and an "x" section 58f. An annotation 58b, which is displayed in the full-content mode, indicates the title section 58d, the object section 58e, the "x" section 58f, an author's name 58g, and a text body 58h. An annotation 58c, which is displayed in the reducing mode, indicates the object section 58e only. An annotation 58i is displayed in the highlighting mode).

Jain, Goede, and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, Goede, and Yamamoto before him or her, to modify the system of Jain and Goede, in particular Jain, to include the teachings of Yamamoto, as providing client computers with annotation functions

enabling users of the client computers to view object-based documents with annotations, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

In regards to **claim 14**, Jain and Goede, in particular Jain doesn't explicitly teach:

- transfer the image annotation executable to an imaging system.

However, Yamamoto teaches such use (p. 4, [0070], lines 2 – 13, see upon receiving the request previously handled by the step c3, one of sets of viewing information stored on the server 10 which corresponds to the selected name, and then transmits the selected set of viewing information to the client computer 50. The set of viewing information includes: a) document information representing a selected file (document) in a format viewable in the Web browser (e.g., a Hyper-Text Mark-up Language (HTML) file); b) annotation information representing annotations in a format viewable in the Web browser (e.g., an HTML file); and c) a script for allocating the annotations to the file (document) (e.g., a JavaScript)).

Jain, Goede, and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, Goede, and Yamamoto before him or her, to modify the system of Jain and Goede, in particular Jain, to include the teachings of Yamamoto, as providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

In regards to **claim 15**, Jain doesn't explicitly teach

- to annotate the medical image with embedded text.

However, Goede teaches such use (abstract, lines 1 – 6, see a method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

Jain and Goede are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, and Goede before him or her, to modify the system of Jain to include the teachings of Goede, as a method and system for visually annotating an image, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to define the requirements of a digital non raster-based annotation architecture and annotating methodology for digital images that will serve as a basis for use in a number of exemplary areas: authoring tools, presentation programs, and cataloging systems, as suggested by Goede (P.3, [0035], lines 2 - 6).

Jain and Goede, in particular Jain doesn't explicitly teach:

- the non-procedural image annotation template is written in a language that does not require procedural operations and wherein the procedural image annotation source code further comprises calculations and operations.

However, Yamamoto teaches such p. 2, [0026 – 0030], see allows a user of the client computer to view a document with an attached annotation on a screen of the client computer...The viewing information includes document information, annotation information, and a script...The aforementioned annotation information represents the annotation in a format that allows the user to view the annotation by the Web browser. More particularly, the annotation information includes position information defining a position that the annotation is to be displayed by the Web browser with the annotation

being attached to the document in association with a corresponding one of the plurality of objects...The aforementioned script is to be executed by the client computer for allocating the annotation to the document...The "annotation" may be achieved by displaying a particular comment or note at a particular position on a target document, by underlining, emphasizing, highlighting, coloring, or enclosing a particular portion of a target document, etc.).

Jain, Goede, and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, Goede, and Yamamoto before him or her, to modify the system of Jain and Goede, in particular Jain, to include the teachings of Yamamoto, as providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

In regards to **claim 16**, Jain teaches:

- the translator being operable to receive a non-procedural image annotation template (Fig. 1, note arrow from #104 to #108, and arrow from #102 to #120), and (p. 1, [0003], lines 1 – 6, see A Document Type Definition file ("DTD") associated with an XML document defines how the mark up tags within the document should be interpreted by the application presenting the document. The HTML specification that defines how Web pages should be displayed by Web browsers is one example of a DTD).
- a translator of the parsed non-procedural image annotation template to the high-level language source code (Fig. 1, #104 XML DTD, #108 XML_To_JAVA, #110 Java Class, #112 Java Class File, #120 Program, #124 Java Object), and (p. 1,[0011-0012], see Techniques are disclosed for converting an XML document to an object in an object-oriented language, thereby providing a structured, programmatic, consistent, powerful, and in-memory method for accessing the data in the XML document... In one embodiment, a translation tool converts an XML DTD associated with the XML document to Java classes from which a Java object corresponding to the XML document is instantiated).
- translate the non-procedural image annotation template to high-level language source code (Fig. 1, #104 XML DTD, #108 XML_To_JAVA, #110 Java Class, #112 Java Class File, #120 Program, #124 Java Object), and (p. 1,[0011-0012], see Techniques are disclosed for converting an XML document to an object in an object-oriented language, thereby providing a structured, programmatic, consistent, powerful, and in-memory method for accessing the data in the XML

document... In one embodiment, a translation tool converts an XML DTD associated with the XML document to Java classes from which a Java object corresponding to the XML document is instantiated).

- a parser of the non-procedural image annotation template (Fig. 2, Fig. 3).

Jain doesn't explicitly teach

- a medical image with embedded text.

However, Goede teaches such use (abstract, lines 1 – 6, see a method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

Jain and Goede are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, and Goede before him or her, to modify the system of Jain to include the teachings of Goede, as a method and system for visually annotating an image, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to define the requirements of a digital non raster-based annotation architecture and annotating methodology for digital images that will serve as a basis for use in a number of exemplary areas: authoring

tools, presentation programs, and cataloging systems, as suggested by Goede (P.3, [0035], lines 2 - 6).

Jain and Goede, in particular Jain doesn't explicitly teach:

- that includes calculations and operations to annotate.

However, Yamamoto teaches such use (p. 2, [0026 – 0030], see allows a user of the client computer to view a document with an attached annotation on a screen of the client computer...The viewing information includes document information, annotation information, and a script...The aforementioned annotation information represents the annotation in a format that allows the user to view the annotation by the Web browser. More particularly, the annotation information includes position information defining a position that the annotation is to be displayed by the Web browser with the annotation being attached to the document in association with a corresponding one of the plurality of objects...The aforementioned script is to be executed by the client computer for allocating the annotation to the document...The "annotation" may be achieved by displaying a particular comment or note at a particular position on a target document, by underlining, emphasizing, highlighting, coloring, or enclosing a particular portion of a target document, etc..).

Jain, Goede, and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, Goede, and Yamamoto before him or her, to modify the system of Jain and Goede, in particular Jain, to include the

teachings of Yamamoto, as providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, and accordingly it would enhance the system of Jain, which is focused on a translation tool to convert an XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

In regards to **claim 17**, Jain teaches:

- an initiator of a parser of the non-procedural image annotation template (p. 1, [0012], lines 1- 4, see In one embodiment, a translation tool converts an XML DTD associated with the XML document to Java classes from which a Java object corresponding to the XML document is instantiated), (Fig. 5 #516 Run Program 120 to Instantiate java object 124 from java Classes 110, having XML document 102 as in input).
- an element parser (Fig. 2, Fig. 3).
- an element starter, an element ender, and an element attacher (Fig. 5, #508 Convert Each of the identified nodes to a respective Java class 110 and store these java classes to files 112), (Fig. 4A-P), and (p. 3, [0042], see In step 508, XML_to_Java translation tool 108 converts each of the nodes Address, Street,

City, State, Zip, and Country identified in step 504 to a respective Java class 110 Address, Street, City, State, Zip, and Country. XML_to_Java translation tool 108 stores each of these classes 110 to a respective file 112 in FIG. 4A to FIG. 4P). An element starter, ender and attacher has to exist, otherwise the invention would not be able to convert each node into their associated java code, as depicted in Fig. 4A-P, and the invention would not be functional.

Jain and Goede, in particular Jain doesn't explicitly teach:

- the parser being compliant with the Simple API for XML standard.

However, Yamamoto teaches such use (p. 9, [0148], lines 10 – 12, see The JX-model refers to a model of an XML repository of a Java source program), and (p. 11, [0183], lines 1 – 8, see While the system 1 has been described above with respect to the case where a document to be annotated is a Java source program, the system 1, which allows information to be shared and exchanged using annotations, may also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like).

Jain, Goede, and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, Goede, and Yamamoto before him or her, to modify the system of Jain and Goede, in particular Jain, to include the teachings of Yamamoto, as providing client computers with annotation functions

enabling users of the client computers to view object-based documents with annotations, and accordingly it would enhance the system of Jain, which is focused on a translation tool to convert an XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

In regards to **claim 18**, Jain teaches:

- the translator of the parsed non-procedural image annotation template further comprises: a writer of high-level language class package source code (Fig. 6, #612 Write the java package statement), and (p. 2, [0028], lines 7 – 10, see for each of the identified nodes in the XML DTD, the translation tool creates a corresponding Java class and writes this Java class to a respective file. For each of the created Java classes, the translation tool initially generates a package statement).
- a writer of high-level language import statement source code (p. 2, [0028], lines 11 – 13, see the translation tool then generates the standard import statements).
- a writer of high-level language class declaration source code (Fig. 6, #628 Generate Java class declaration).

- a writer of high-level language variable declaration source code (Fig. 6, #632, Generate Java class attribute variables).
- a filler of hash table representing at least one DICOM element of the high-level language source code (Fig. 6, #636, Generate Java class constructors).

In regards to **claim 19**, Jain teaches:

- a writer of high-level language source code that constructs a group tree as described by the elements of the non-procedural image annotation template (Fig. 6, #624 Generate Top-Level note import statements, #636 Generate Java class constructors, #648 Generate Java common functions).
- a writer of high-level language source code that loads assigner attributes in an ApStyle object and hashes with instances of run-time class declarations (Fig. 2, Fig. 3).
- a writer of high-level language source code that loads a data structure adapted for storage of DICOM elements with all DICOM elements that are required for annotation (Fig. 6, #624 Generate Top-Level note import statements, #636 Generate Java class constructors, and #648 Generate Java common functions).
- a writer of high-level language source code that loads the data structure adapted for tool-tip data with character strings (Fig. 6, #616 Generate Standard Import Statements, #638 Generate input stream constructor).
- a writer of high-level language source code that initializes a layout data structure that is designed to hold annotation strings for each quadrant, line, and segment

(p.2, [0029], lines 8 – 12, see Finally, the translation tool generates the common Java class functions, which are methods to retrieve information about the overall messages as defined by the XML DTD. The translation tool also generates the appropriate Java syntaxes and comments).

- a writer of high-level language source code that invalidates all variable contents, as one would use if this object was assigned to control annotation of another image (Fig. 6, #644 Generate Java to DOM converter method).
- a writer of high-level language source code that generates comments that document a runtime variable updates object; and a writer of Java source code that evaluates expressions in order of dependencies (Fig. 6 #642 Generate Java validation method).

In regards to **claim 20**, Jain teaches:

- to translate a non-procedural image annotation template to high-level language source code (Fig. 1, #104 XML DTD, #108 XML_To_JAVA, #110 Java Class, #112 Java Class File, #120 Program, #124 Java Object), and (p. 1,[0011-0012], see Techniques are disclosed for converting an XML document to an object in an object-oriented language, thereby providing a structured, programmatic, consistent, powerful, and in-memory method for accessing the data in the XML document... In one embodiment, a translation tool converts an XML DTD associated with the XML document to Java classes from which a Java object corresponding to the XML document is instantiated).

- parsing the non-procedural image annotation template comprising (Fig. 2, Fig. 3).
- initializing a parser of the non-procedural image annotation template, the parser being compliant with the Simple API for XML standard (p. 1, [0012], lines 1- 4, see In one embodiment, a translation tool converts an XML DTD associated with the XML document to Java classes from which a Java object corresponding to the XML document is instantiated), (Fig. 5 #516 Run Program 120 to Instantiate java object 124 from java Classes 110, having XML document 102 as in input).
- parsing an element of the of the non-procedural image annotation template using the parser (Fig. 2, Fig. 3).
- starting an element of the non-procedural image annotation template, ending an element of the non-procedural image annotation template, attaching the parsed element (Fig. 5, #508 Convert Each of the identified nodes to a respective Java class 110 and store these java classes to files 112), (Fig. 4A-P), and (p. 3, [0042], see In step 508, XML_to_Java translation tool 108 converts each of the nodes Address, Street, City, State, Zip, and Country identified in step 504 to a respective Java class 110 Address, Street, City, State, Zip, and Country. XML_to_Java translation tool 108 stores each of these classes 110 to a respective file 112 in FIG. 4A to FIG. 4P). An element starter, ender and attacher has to exist, otherwise the invention would not be able to convert each node into their associated java code, as depicted in Fig. 4A-P, and the invention would not be functional.

- repeating the starting, parsing, ending and attaching for each element of the non-procedural image annotation template, yielding a parsed non-procedural image annotation template (Fig. 5, #504 Identify Data nodes in XML DTD, #508 convert each of the identified nodes to a respective java class 110 and store these java classes to files 112).
- translating the parsed non-procedural image annotation template to high-level language source code (Fig. 1, #104 XML DTD, #108 XML_To_JAVA, #110 Java Class, #112 Java Class File, #120 Program, #124 Java Object), and (p. 1,[0011-0012], see Techniques are disclosed for converting an XML document to an object in an object-oriented language, thereby providing a structured, programmatic, consistent, powerful, and in-memory method for accessing the data in the XML document... In one embodiment, a translation tool converts an XML DTD associated with the XML document to Java classes from which a Java object corresponding to the XML document is instantiated).

Jain doesn't explicitly teach

- to annotate a medical image with embedded text.

However, Goede teaches such use (abstract, lines 1 – 6, see a method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

Jain and Goede, in particular Jain doesn't explicitly teach:

- the non-procedural image annotation template including calculations and operations.

However, Yamamoto teaches such use (p. 2, [0026 – 0030], see allows a user of the client computer to view a document with an attached annotation on a screen of the client computer...The viewing information includes document information, annotation information, and a script...The aforementioned annotation information represents the annotation in a format that allows the user to view the annotation by the Web browser. More particularly, the annotation information includes position information defining a position that the annotation is to be displayed by the Web browser with the annotation being attached to the document in association with a corresponding one of the plurality of objects...The aforementioned script is to be executed by the client computer for allocating the annotation to the document...The "annotation" may be achieved by displaying a particular comment or note at a particular position on a target document, by underlining, emphasizing, highlighting, coloring, or enclosing a particular portion of a target document, etc..).

Jain, Goede, and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, Goede, and Yamamoto before him or her, to modify the system of Jain and Goede, in particular Jain, to include the teachings of Yamamoto, as providing client computers with annotation functions enabling users of the client computers to view object-based documents with

annotations, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

In regards to **claim 21**, Jain teaches:

- the translating of the parsed non-procedural image annotation template further comprises: writing a high-level language class package (Fig. 6, #612 Write the java package statement), and (p. 2,[0028], lines 7 – 10, see For each of the identified nodes in the XML DTD, the translation tool creates a corresponding Java class and writes this Java class to a respective file. For each of the created Java classes, the translation tool initially generates a package statement).
- writing high-level language import statements (p. 2, [0028], lines 11 – 13, The translation tool then generates the standard import statements).
- writing high-level language class declarations (Fig. 6, #628 Generate Java class declaration).
- writing high-level language variable declarations (Fig. 6, #632, Generate Java class attribute variables).

- filling hash tables representing DICOM elements of the high-level language source code (Fig. 6, #636, Generate Java class constructors).

In regards to **claim 22**, Jain and Goede, in particular Jain doesn't explicitly teach:

- the non-procedural image annotation template further comprises a mixture of XML and conventional numerical expressions based on C language syntax.

However, Yamamoto teaches such use (p. 9, [0148], lines 10 – 12, see The JX-model refers to a model of an XML repository of a Java source program), and (p. 11, [0183], lines 1 – 8, see While the system 1 has been described above with respect to the case where a document to be annotated is a Java source program, the system 1, which allows information to be shared and exchanged using annotations, may also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like).

Jain, Goede, and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, Goede, and Yamamoto before him or her, to modify the system of Jain and Goede, in particular Jain, to include the teachings of Yamamoto, as providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, and accordingly it would enhance the system of Jain, which is focused on a

translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

In regards to **claim 23**, Jain teaches:

- to translate a non-procedural image annotation template to high-level language source code (Fig. 1, #104 XML DTD, #108 XML_To_JAVA, #110 Java Class, #112 Java Class File, #120 Program, #124 Java Object), and (p. 1, [0011-0012], see Techniques are disclosed for converting an XML document to an object in an object-oriented language, thereby providing a structured, programmatic, consistent, powerful, and in-memory method for accessing the data in the XML document... In one embodiment, a translation tool converts an XML DTD associated with the XML document to Java classes from which a Java object corresponding to the XML document is instantiated).
- parsing the non-procedural image annotation template comprising (Fig. 2, Fig. 3).
- initializing a parser of the non-procedural image annotation template (p. 1, [0012], lines 1- 4, see In one embodiment, a translation tool converts an XML DTD associated with the XML document to Java classes from which a Java object corresponding to the XML document is instantiated), (Fig. 5 #516 Run

Program 120 to Instantiate java object 124 from java Classes 110, having XML document 102 as in input).

- parsing an element of the of the non-procedural image annotation template using the parser (Fig. 2, Fig. 3).
- starting an element of the non-procedural image annotation template, ending an element of the non-procedural image annotation template, attaching the parsed element (Fig. 5, #508 Convert Each of the identified nodes to a respective Java class 110 and store these java classes to files 112), (Fig. 4A-P), and (p. 3, [0042], see In step 508, XML_to_Java translation tool 108 converts each of the nodes Address, Street, City, State, Zip, and Country identified in step 504 to a respective Java class 110 Address, Street, City, State, Zip, and Country. XML_to_Java translation tool 108 stores each of these classes 110 to a respective file 112 in FIG. 4A to FIG. 4P). An element starter, ender and attacher has to exist, otherwise the invention would not be able to convert each node into their associated java code, as depicted in Fig. 4A-P, and the invention would not be functional.
- repeating the starting, parsing, ending and attaching for each element of the non-procedural image annotation template, yielding a parsed non-procedural image annotation template, the translating further comprising (Fig. 5, #504 Identify Data nodes in XML DTD, #508 convert each of the identified nodes to a respective java class 110 and store these java classes to files 112).

- translating (Fig. 1, #104 XML DTD, #108 XML_To_JAVA, #110 Java Class, #112 Java Class File, #120 Program, #124 Java Object), and (p. 1,[0011-0012], see Techniques are disclosed for converting an XML document to an object in an object-oriented language, thereby providing a structured, programmatic, consistent, powerful, and in-memory method for accessing the data in the XML document... In one embodiment, a translation tool converts an XML DTD associated with the XML document to Java classes from which a Java object corresponding to the XML document is instantiated).

Jain doesn't explicitly teach

the parsed non-procedural image annotation template to high-level language source code to annotate a medical image with embedded text.

However, Goede teaches such use (abstract, lines 1 – 6, see a method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

Jain and Goede are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, and Goede before him or her, to modify the system of Jain to include the teachings of Goede, as a method and system for visually annotating an image, and accordingly it would enhance the system of Jain,

which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to define the requirements of a digital non raster-based annotation architecture and annotating methodology for digital images that will serve as a basis for use in a number of exemplary areas: authoring tools, presentation programs, and cataloging systems, as suggested by Goede (P.3, [0035], lines 2 - 6).

Jain and Goede, in particular Jain doesn't explicitly teach:

- the parser being compliant with the Simple API for XML standard.

However Yamamoto teaches such use (p. 9, [0148], lines 10 – 12, see The JX-model refers to a model of an XML repository of a Java source program), and (p. 11, [0183], lines 1 – 8, see While the system 1 has been described above with respect to the case where a document to be annotated is a Java source program, the system 1, which allows information to be shared and exchanged using annotations, may also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like).

Jain, Goede, and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, Goede, and Yamamoto before him or her, to modify the system of Jain and Goede, in particular Jain, to include the

teachings of Yamamoto, as providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, and accordingly it would enhance the system of Jain, which is focused on a translation tool to convert an XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

In regards to **claim 24**, Jain teaches:

- the translating of the parsed non-procedural image annotation template further comprises: writing a high-level language class package (Fig. 6, #612 Write the java package statement), and (p. 2, [0028], lines 7 – 10, see For each of the identified nodes in the XML DTD, the translation tool creates a corresponding Java class and writes this Java class to a respective file. For each of the created Java classes, the translation tool initially generates a package statement).
- writing high-level language import statements (p. 2, [0028], lines 11 – 13, The translation tool then generates the standard import statements).
- writing high-level language class declarations (Fig. 6, #628 Generate Java class declarations).

- writing high-level language variable declarations (Fig. 6, #628 Generate Java class declarations).
- filling hash tables representing DICOM elements of the high-level language source code (Fig. 6, #636, Generate Java class constructors).

In regards to **claim 25**, Jain and Goede, in particular Jain doesn't explicitly teach:

- the non-procedural image annotation template further comprises a mixture of XML and conventional numerical expressions based on C language syntax.

However Yamamoto teaches such use (p. 9, [0148], lines 10 – 12, see The JX-model refers to a model of an XML repository of a Java source program), and (p. 11, [0183], lines 1 – 8, see While the system 1 has been described above with respect to the case where a document to be annotated is a Java source program, the system 1, which allows information to be shared and exchanged using annotations, may also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like).

Jain, Goede, and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, Goede, and Yamamoto before him or her, to modify the system of Jain and Goede, in particular Jain, to include the teachings of Yamamoto, as providing client computers with annotation functions

enabling users of the client computers to view object-based documents with annotations, and accordingly it would enhance the system of Jain, which is focused on a translation tool to convert an XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

In regards to **claim 51**, Jain teaches:

- receiving the annotation presentation description and the image annotation object, the image annotation object containing text (Fig. 1, note arrow from #104 to #108, and arrow from #102 to #120), and (p. 1, [0003], lines 1 – 6, see A Document Type Definition file ("DTD") associated with an XML document defines how the mark up tags within the document should be interpreted by the application presenting the document. The HTML specification that defines how Web pages should be displayed by Web browsers is one example of a DTD).

Jain doesn't explicitly teach

- instructions that are native to a processor that is operably coupled to the computer accessible medium.

However Goede teaches such use (Fig. 6, and P. 7, [0077], lines 1 – 13, see FIG. 6 is a diagram showing the data flow carried out in accordance with an

illustrative embodiment of the present invention. The first step is to extract the image data...Digital information can also consist of color settings, grayscale levels, image pixel dimensions, or the type of image the user is requesting, i.e., TIF, JPEG, DICOM, etc.), and (p. 5, [0056], lines 9 – 13, see The metadata may also include patient information in the case of medical images), (abstract, lines 1 – 6, see A method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

Jain and Goede are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, and Goede before him or her, to modify the system of Jain to include the teachings of Goede, as a method and system for visually annotating an image, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to define the requirements of a digital non raster-based annotation architecture and annotating methodology for digital images that will serve as a basis for use in a number of exemplary areas: authoring tools, presentation programs, and cataloging systems, as suggested by Goede (P.3, [0035], lines 2 - 6).

Jain and Goede, in particular Jain doesn't explicitly teach:

- the annotation presentation description further comprises an annotation presentation description that is compiled from a non-procedural image annotation template.

However Yamamoto teaches such use (Fig. 1, #104 XML DTD, #108 XML_To_JAVA, #110 Java Class, #112 Java Class File, #120 Program, #124 Java Object), and (p. 1, [0011-0012], see Techniques are disclosed for converting an XML document to an object in an object-oriented language, thereby providing a structured, programmatic, consistent, powerful, and in-memory method for accessing the data in the XML document... In one embodiment, a translation tool converts an XML DTD associated with the XML document to Java classes from which a Java object corresponding to the XML document is instantiated).

- generate and view an annotated medical image, from an image annotation object having an image and an annotation presentation description.

However Yamamoto teaches such use (Fig. 1 #50 Client Web Browser #51, see Annotation, and Web Browser).

- invoking the native instructions contained in the annotation presentation description and using text from the image annotation object, to generate and view the annotated medical image that is annotated with the text from the image annotation object.

However Yamamoto teaches such use (Fig. 1 #50 Client Web Browser #51, see Annotation, and Web Browser).

Jain, Goede, and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, Goede, and Yamamoto before him or her, to modify the system of Jain and Goede, in particular Jain, to include the teachings of Yamamoto, as providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

In regards to **claim 52**, Jain teaches:
the image annotation object further comprises an image annotation object that conforms to the Digital Imaging and Communications in Medicine standard (Fig. 6, #616 Generate Standard Import Statements, #638 Generate input stream constructor).

In regards to **claim 53**, Jain doesn't explicitly teach:

- selecting a style class object that is appropriate for imaging of a modality, the modality is selected from a group consisting of magnetic resonance, computed tomography, X-ray, ultrasound and positron emission tomography; and instantiating the selected style class object.

However Goede teaches such use (Fig. 6, and P. 7, [0077], lines 1 – 13, see FIG. 6 is a diagram showing the data flow carried out in accordance with an illustrative embodiment of the present invention. The first step is to extract the image data...Digital information can also consist of color settings, grayscale levels, image pixel dimensions, or the type of image the user is requesting, i.e., TIF, JPEG, DICOM, etc.), and (p. 5, [0056], lines 9 – 13, see The metadata may also include patient information in the case of medical images), (abstract, lines 1 – 6, see A method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

Jain and Goede are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, and Goede before him or her, to modify the system of Jain to include the teachings of Goede, as a method and system for visually annotating an image, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition

file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to define the requirements of a digital non raster-based annotation architecture and annotating methodology for digital images that will serve as a basis for use in a number of exemplary areas: authoring tools, presentation programs, and cataloging systems, as suggested by Goede (P.3, [0035], lines 2 - 6).

In regards to **claim 54**, Jain teaches:

- receiving parsed annotation data and the image from the image annotation object through a host image annotation parser (Fig. 1, note arrow from #104 to #108, and arrow from #102 to #120), and (p. 1, [0003], lines 1 – 6, see A Document Type Definition file ("DTD") associated with an XML document defines how the mark up tags within the document should be interpreted by the application presenting the document. The HTML specification that defines how Web pages should be displayed by Web browsers is one example of a DTD).

Jain and Goede, in particular Jain doesn't explicitly teach:

- forwarding the image and text to a graphic utilities object that is native to an operating system that is running on the processor, whereupon the graphic utilities object is to generate the annotated image.

However Yamamoto teaches such use (Fig. 1 #50 Client Web Browser #51, see Annotation, and Web Browser).

Jain, Goede, and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, Goede, and Yamamoto before him or her, to modify the system of Jain and Goede, in particular Jain, to include the teachings of Yamamoto, as providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

In regards to **claim 55**, Jain teaches:

- the annotation object conforms to the Digital Imaging and Communications in Medicine standard and has an image (Fig. 6, #616 Generate Standard Import Statements, #638 Generate input stream constructor).
- high-level language based means for receiving the annotation presentation description and the image annotation object, the image annotation object

containing text (Fig. 6, # 616 Generate Standard Import Statements, # 638 Generate input stream constructor).

Jain doesn't explicitly teach:

- high-level language based apparatus operable to select a style class object that is appropriate for imaging of a modality.

However Goede teaches such use (Fig. 6, and P. 7, [0077], lines 1 – 13, see FIG. 6 is a diagram showing the data flow carried out in accordance with an illustrative embodiment of the present invention. The first step is to extract the image data...Digital information can also consist of color settings, grayscale levels, image pixel dimensions, or the type of image the user is requesting, i.e., TIF, JPEG, DICOM, etc.), and (p. 5, [0056], lines 9 – 13, see The metadata may also include patient information in the case of medical images), (abstract, lines 1 – 6, see A method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

- the modality is selected from a group consisting of magnetic resonance, computed tomography, X-ray, ultrasound and positron emission tomography.

However Goede teaches such (Fig. 6, and P. 7, [0077], lines 1 – 13, see FIG. 6 is a diagram showing the data flow carried out in accordance with an illustrative embodiment of the present invention. The first step is to extract the image data...Digital information can also consist of color settings, grayscale levels, image pixel dimensions, or the type

of image the user is requesting, i.e., TIF, JPEG, DICOM, etc.), and (p. 5, [0056], lines 9 – 13, see The metadata may also include patient information in the case of medical images), (abstract, lines 1 – 6, see A method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

Jain and Goede are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, and Goede before him or her, to modify the system of Jain to include the teachings of Goede, as a method and system for visually annotating an image, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to define the requirements of a digital non raster-based annotation architecture and annotating methodology for digital images that will serve as a basis for use in a number of exemplary areas: authoring tools, presentation programs, and cataloging systems, as suggested by Goede (P.3, [0035], lines 2 - 6).

Jain and Goede, in particular Jain doesn't explicitly teach:

- the annotation presentation description further comprises an annotation presentation description compiled from a non-procedural image annotation template and has instructions that are native to a processor.

However Yamamoto teaches such use (p. 4, [0070], lines 6 – 13, see The set of viewing information includes: a) document information representing a selected file (document) in a format viewable in the Web browser (e.g., a Hyper-Text Mark-up Language (HTML) file); b) annotation information representing annotations in a format viewable in the Web browser (e.g., an HTML file); and c) a script for allocating the annotations to the file (document)(e.g., a JavaScript)).

- high-level language means for invoking the native instructions contained in the annotation presentation description and using text from the image annotation object, to generate and view the annotated medical image that is annotated with the text from the image annotation object.

However Yamamoto teaches such use (p. 4, [0070], lines 2 – 13, see upon receiving the request previously handled by the step c3, one of sets of viewing information stored on the server 10 which corresponds to the selected name, and then transmits the selected set of viewing information to the client computer 50. The set of viewing information includes: a) document information representing a selected file (document) in a format viewable in the Web browser (e.g., a Hyper-Text Mark-up Language (HTML) file); b) annotation information representing annotations in a format viewable in the Web browser (e.g., an HTML file); and c) a script for allocating the annotations to the file (document) (e.g., a JavaScript)).

Jain, Goede, and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, Goede, and Yamamoto before him or her, to modify the system of Jain and Goede, in particular Jain, to include the teachings of Yamamoto, as providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

In regards to **claim 59**, Jain teaches:

a viewer that is operable to access: objects that conform to the Digital Imaging and Communications in Medicine standard (Fig. 6, #616 Generate Standard Import Statements, #638 Generate input stream constructor, #644 "Generate Java to DOM converter method").

Jain doesn't explicitly teach:

- the objects comprising an image and an annotation presentation description. .

However Goede teaches such (abstract, lines 1 – 6, see a method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

Jain and Goede are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, and Goede before him or her, to modify the system of Jain to include the teachings of Goede, as a method and system for visually annotating an image, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to define the requirements of a digital non raster-based annotation architecture and annotating methodology for digital images that will serve as a basis for use in a number of exemplary areas: authoring tools, presentation programs, and cataloging systems, as suggested by Goede (P.3, [0035], lines 2 - 6).

Jain and Goede, in particular Jain doesn't explicitly teach:

- computer instructions that are native to the processor, the computer instructions having been generated by a processor on another system, the computer-accessible medium being operably coupled to the processor through the bus.

However Yamamoto teaches such use (Fig. 1, #40 bi-directional arrows from #10 Web server to multiple clients, #50 Clients), (p. 2,[0022], lines 1 – 8, see The use of conventional software for an annotation function allows one computer, which uses the same type of software for the annotation function that has been used by another computer for attaching an annotation to an electronic document, to display the electronic document with the attached annotation on the display screen and allows a user of the one computer to view the electronic document with the attached annotation), and (p. 2, [0024], lines 1 – 5, see an object of the present invention is to provide a method for causing a server to provide a plurality of client computers with annotation functions, thereby to allow users of the client computers to communicate with each other using annotations).

Jain, Goede, and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, Goede, and Yamamoto before him or her, to modify the system of Jain and Goede, in particular Jain, to include the teachings of Yamamoto, as providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to also be effectively utilized also for a separate type of a

document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

In regards to **claim 60**, Jain and Goede, in particular Jain doesn't explicitly teach:

- the viewer further comprises a browser and the computer instructions further comprise computer instructions encapsulated in a browser plug-in component.

However Yamamoto teaches such use (Fig. 1 #50 Client Web Browser #51, see Annotation, and Web Browser).

Jain, Goede, and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, Goede, and Yamamoto before him or her, to modify the system of Jain and Goede, in particular Jain, to include the teachings of Yamamoto, as providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in

another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

In regards to **claim 61**, Jain and Goede, in particular Jain doesn't explicitly teach:

- the computer instructions further comprise computer instructions encapsulated in a dynamic link library.

However Yamamoto teaches such use (p. 7, [0117], lines 3 – 13, see JSP includes any of a number of Java technologies that are directed to servers and that enable the dynamic generation of Web pages. "Servlet" is a technology for implementing software components that perform processing on a Web server upon request of a client (Web browser). Dynamic HTML (DHTML) (e.g., HTML, JavaScript, Cascading Style Sheet (CSS), or any other technology for adding interactivity to Web pages), which is used for allowing output of the server 10 to the client computer 50, provides the annotation functions at the client).

Jain, Goede, and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, Goede, and Yamamoto before him or her, to modify the system of Jain and Goede, in particular Jain, to include the teachings of Yamamoto, as providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, and accordingly it would enhance the system of Jain, which is focused on a

translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

In regards to **claim 64**, Jain teaches:

- executable instructions capable of directing a processor to perform: (Fig. 1, #104 XML DTD, #108 XML_To_JAVA, #110 Java Class, #112 Java Class File, #120 Program, #124 Java Object), and (p. 1,[0011-0012], see Techniques are disclosed for converting an XML document to an object in an object-oriented language, thereby providing a structured, programmatic, consistent, powerful, and in-memory method for accessing the data in the XML document... In one embodiment, a translation tool converts an XML DTD associated with the XML document to Java classes from which a Java object corresponding to the XML document is instantiated).
- generating an annotated medical image that is annotated with the text from the image annotation object (Fig. 1, #104 XML DTD, #108 XML_To_JAVA, #110 Java Class, #112 Java Class File, #120 Program, #124 Java Object), and (p. 1,[0011-0012], see Techniques are disclosed for converting an XML document to an object in an object-oriented language, thereby providing a structured,

programmatic, consistent, powerful, and in-memory method for accessing the data in the XML document... In one embodiment, a translation tool converts an XML DTD associated with the XML document to Java classes from which a Java object corresponding to the XML document is instantiated). It's obvious that documents contain textual data.

Jain doesn't explicitly teach

- generate an annotated medical image.

However, Goede teaches such use (abstract, lines 1 – 6, see a method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

- invoking executable instructions that are native to the processor, the executable instructions being contained in a medical image annotation executable.

However, Goede teaches such use (abstract, lines 1 – 6, see a method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

Jain and Goede are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of

ordinary skill in the art, having the teaching of Jain, and Goede before him or her, to modify the system of Jain to include the teachings of Goede, as a method and system for visually annotating an image, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to define the requirements of a digital non raster-based annotation architecture and annotating methodology for digital images that will serve as a basis for use in a number of exemplary areas: authoring tools, presentation programs, and cataloging systems, as suggested by Goede (P.3, [0035], lines 2 - 6).

Jain and Goede, in particular Jain doesn't explicitly teach:

- operands to the native computer instructions include text.

However, Yamamoto teaches such use p. 3, [0041], see (displaying an annotation for storing on the server annotation data transmitted from the client computer in an XML format and then outputting to the client computer desired information that has been read out from the server, together with the HTML for the source-view).

Jain, Goede, and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, Goede, and Yamamoto before him or her, to modify the system of Jain and Goede, in particular Jain, to include the teachings of Yamamoto, as providing client computers with annotation functions

enabling users of the client computers to view object-based documents with annotations, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

In regards to **claim 65**, Jain and Goede, in particular Jain doesn't explicitly teach:

- the executable instructions further comprise executable instructions capable of directing the processor to perform displaying the annotated image on a visual display in a browser.

However Yamamoto teaches such use (Fig. 1 #50 Client Web Browser #51, see Annotation and Web Browser).

Jain, Goede, and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, Goede, and Yamamoto before him or her, to modify the system of Jain and Goede, in particular Jain, to include the teachings of Yamamoto, as providing client computers with annotation functions enabling users of the client computers to view object-based documents with

annotations, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

In regards to **claim 66**, Jain teaches:

the image annotation object further comprises an object that is encoded according to a standard that defines data elements in object-oriented terms, each object having a unique tag, name, characteristics and semantics(Fig. 1, #104 XML DTD, #108 XML_To_JAVA, #110 Java Class, #112 Java Class File, #120 Program, #124 Java Object), and (p. 1,[0011-0012], see Techniques are disclosed for converting an XML document to an object in an object-oriented language, thereby providing a structured, programmatic, consistent, powerful, and in-memory method for accessing the data in the XML document... In one embodiment, a translation tool converts an XML DTD associated with the XML document to Java classes from which a Java object corresponding to the XML document is instantiated).

In regards to **claim 67**, Jain and Goede, in particular Jain doesn't explicitly teach:

- the original image further comprises an original unannotated medical image.

However Yamamoto teaches such use (Fig. 10 #2, On completion of the displaying a location of a target object to be annotated is specified by JavaScript).

Jain, Goede, and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, Goede, and Yamamoto before him or her, to modify the system of Jain and Goede, in particular Jain, to include the teachings of Yamamoto, as providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

In regards to **claim 68**, Jain and Goede, in particular Jain doesn't explicitly teach:

- the original image further comprises an original image contained with the image annotation object.

However Yamamoto teaches such use (Fig. 10 #2, On completion of the displaying a location of a target object to be annotated is specified by JavaScript).

Jain, Goede, and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, Goede, and Yamamoto before him or her, to modify the system of Jain and Goede, in particular Jain, to include the teachings of Yamamoto, as providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

In regards to **claim 69**, Jain and Goede, in particular Jain doesn't explicitly teach:

- the image annotation executable further comprises an annotation presentation description.

However Yamamoto teaches such use (p. 4, [0070], lines 6 – 13, see The set of viewing information includes: a) document information representing a selected file (document) in a format viewable in the Web browser (e.g., a Hyper-Text Mark-up Language (HTML) file); b) annotation information representing annotations in a format

viewable in the Web browser (e.g., an HTML file); and c) a script for allocating the annotations to the file (document) (e.g., a JavaScript)).

Jain, Goede, and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, Goede, and Yamamoto before him or her, to modify the system of Jain and Goede, in particular Jain, to include the teachings of Yamamoto, as providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

In regards to **claim 77**, Jain teaches:
an image annotation executable that package is a form selected from the group consisting of a browser-plug-in and a dynamic link library (p. 7, [0117], lines 3 – 13, see JSP includes any of a number of Java technologies that are directed to servers and that enable the dynamic generation of Web pages. "Servlet" is a technology for

implementing software components that perform processing on a Web server upon request of a client (Web browser). Dynamic HTML (DHTML) (e.g., HTML, JavaScript, Cascading Style Sheet (CSS), or any other technology for adding interactivity to Web pages), which is used for allowing output of the server 10 to the client computer 50, provides the annotation functions at the client).

9. **Claims 26, 27, 56, and 70-74** are rejected under 35 U.S.C. 103(a) as being unpatentable over Jain, in view of Yamamoto.

In regards to claims **55**, the rejections above are incorporated, respectively.

In regards to **claim 26**, Jain teaches:

- apparatus operable to parse a non-procedural image annotation template comprising (Fig. 2, Fig. 3).
- parse an element of the of the non-procedural image annotation template using the parser (Fig. 2, Fig. 3).
- start an element of the non-procedural image annotation template, end an element of the non-procedural image annotation template, attach the parsed element, repeat the starting, parsing, ending and attaching for each element of the non-procedural image annotation template, yielding a parsed non-procedural image annotation template, the high-level language based system further comprising (Fig. 5, #508 Convert Each of the identified nodes to a respective Java class 110 and store these java classes to files 112), (Fig. 4A-P), and (p. 3, [0042], see In step 508, XML_to_Java translation tool 108 converts each of the nodes Address, Street, City, State, Zip, and Country identified in step 504 to a

respective Java class 110 Address, Street, City, State, Zip, and Country.

XML_to_Java translation tool 108 stores each of these classes 110 to a respective file 112 in FIG. 4A to FIG. 4P). An element starter, ender and attacher has to exist, otherwise the invention would not be able to convert each node into their associated java code, as depicted in Fig. 4A-P, and the invention would not be functional.

- translate comprising: write a high-level language class package (Fig. 1, #104 XML DTD, #108 XML_To_JAVA, #110 Java Class, #112 Java Class File, #120 Program, #124 Java Object), and (p. 1, [0011-0012], see Techniques are disclosed for converting an XML document to an object in an object-oriented language, thereby providing a structured, programmatic, consistent, powerful, and in-memory method for accessing the data in the XML document... In one embodiment, a translation tool converts an XML DTD associated with the XML document to Java classes from which a Java object corresponding to the XML document is instantiated).
- write high-level language import statements (p. 2, [0028], lines 11 – 13, The translation tool then generates the standard import statements).
- write high-level language class declarations (Fig. 6, #628 Generate Java class declarations).
- means for write high-level language variable declarations (Fig. 6, #632, Generate Java class attribute variables).

- fill hash tables representing DICOM elements of high-level language source code (Fig. 6, #636, Generate Java class constructors), and (Fig. 6, #644 Generate Java to DOM converter method).

Jain doesn't explicitly teach:

- initialize a parser of the non-procedural image annotation template, the parser being compliant with the Simple API for XML standard.

However Yamamoto teaches such use (p. 9, [0148], lines 10 – 12, see The JX-model refers to a model of an XML repository of a Java source program), and (p. 11, [0183], lines 1 – 8, see While the system 1 has been described above with respect to the case where a document to be annotated is a Java source program, the system 1, which allows information to be shared and exchanged using annotations, may also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like).

Jain and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, and Yamamoto before him or her, to modify the system of Jain to include the teachings of Yamamoto, as providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type

Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

In regards to **claim 27**, Jain doesn't explicitly teach:

- the non-procedural image annotation template further comprises a mixture of XML and conventional numerical expressions based on C language syntax.

However Yamamoto teaches such use (p. 9, [0148], lines 10 – 12, see The JX-model refers to a model of an XML repository of a Java source program), and (p. 11, [0183], lines 1 – 8, see While the system 1 has been described above with respect to the case where a document to be annotated is a Java source program, the system 1, which allows information to be shared and exchanged using annotations, may also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like).

Jain and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, and Yamamoto before him or her,

to modify the system of Jain to include the teachings of Yamamoto, as providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

In regards to **claim 56**, Jain doesn't explicitly teach

- high-level language based apparatus operable to instantiate the selected style class object.

However, Yamamoto teaches such use(p. 4, [0070], lines 2 – 13, see upon receiving the request previously handled by the step c3, one of sets of viewing information stored on the server 10 which corresponds to the selected name, and then transmits the selected set of viewing information to the client computer 50. The set of viewing information includes: a) document information representing a selected file (document) in a format viewable in the Web browser (e.g., a Hyper-Text Mark-up Language (HTML) file); b) annotation information representing annotations in a format viewable in the Web

browser (e.g., an HTML file); and c) a script for allocating the annotations to the file (document) (e.g., a JavaScript)).

- high-level language apparatus operable to receive parsed annotation data and the image from the image annotation object through a host image annotation parser.

However, Yamamoto teaches such use (p. 4, [0070], lines 2 – 13, see upon receiving the request previously handled by the step c3, one of sets of viewing information stored on the server 10 which corresponds to the selected name, and then transmits the selected set of viewing information to the client computer 50. The set of viewing information includes: a) document information representing a selected file (document) in a format viewable in the Web browser (e.g., a Hyper-Text Mark-up Language (HTML) file); b) annotation information representing annotations in a format viewable in the Web browser (e.g., an HTML file); and c) a script for allocating the annotations to the file (document) (e.g., a JavaScript)).

- high-level language apparatus operable to forward the image and text to a graphic utilities object that is native to an operating system that is running on the processor.

However, Yamamoto teaches such use (Fig. 1, #40 bi-directional arrows from server to clients, #50 Clients, #10 Web server), and (p. 4, [0063], lines 5 – 9, see a connection between the client computer 50 and the server 10 via the network 40 would allow a user of the client computer 50 to access and utilize a Web site (for sending Web pages) built on the server 10).

- the graphic utilities object is to generate the annotated image.

However, Yamamoto teaches such use (Fig. 1 #50 Client Web Browser #51, see Annotation, and Web Browser).

Jain and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, and Yamamoto before him or her, to modify the system of Jain to include the teachings of Yamamoto, as providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

In regards to **claim 70**, Jain teaches:

- invoking executable instructions that are native to the processor, the executable instructions being contained in the annotation presentation description, operands to the native computer instructions including text, the image annotation object

being encoded according to a standard that defines data elements in object-oriented terms, the image annotation object having a unique tag, name, characteristics and semantics (Fig. 1, #104 XML DTD, #108 XML_To_JAVA, #110 Java Class, #112 Java Class File, #120 Program, #124 Java Object), and (p. 1,[0011-0012], see Techniques are disclosed for converting an XML document to an object in an object-oriented language, thereby providing a structured, programmatic, consistent, powerful, and in-memory method for accessing the data in the XML document... In one embodiment, a translation tool converts an XML DTD associated with the XML document to Java classes from which a Java object corresponding to the XML document is instantiated).

Jain doesn't explicitly teach:

- annotating an original medical image with the text from the image annotation object.

However Yamamoto teaches such use (p. 2, [0026 – 0030], see allows a user of the client computer to view a document with an attached annotation on a screen of the client computer...The viewing information includes document information, annotation information, and a script...The aforementioned annotation information represents the annotation in a format that allows the user to view the annotation by the Web browser. More particularly, the annotation information includes position information defining a position that the annotation is to be displayed by the Web browser with the annotation being attached to the document in association with a corresponding one of the plurality of objects...The aforementioned script is to be executed by the client computer for

allocating the annotation to the document...The "annotation" may be achieved by displaying a particular comment or note at a particular position on a target document, by underlining, emphasizing, highlighting, coloring, or enclosing a particular portion of a target document, etc..).

- displaying the annotated image on a visual display.

However Yamamoto teaches such use (Fig. 1 #50 Client Web Browser #51, see Annotation, and Web Browser).

Jain and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, and Yamamoto before him or her, to modify the system of Jain to include the teachings of Yamamoto, as providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

In regards to **claim 71**, Jain doesn't explicitly teach:

- the executable instructions further comprise annotation calculations and operations.

However Yamamoto teaches such use (p. 2, [0026 – 0030], see allows a user of the client computer to view a document with an attached annotation on a screen of the client computer...The viewing information includes document information, annotation information, and a script...The aforementioned annotation information represents the annotation in a format that allows the user to view the annotation by the Web browser. More particularly, the annotation information includes position information defining a position that the annotation is to be displayed by the Web browser with the annotation being attached to the document in association with a corresponding one of the plurality of objects...The aforementioned script is to be executed by the client computer for allocating the annotation to the document...The "annotation" may be achieved by displaying a particular comment or note at a particular position on a target document, by underlining, emphasizing, highlighting, coloring, or enclosing a particular portion of a target document, etc..).

Jain and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, and Yamamoto before him or her, to modify the system of Jain to include the teachings of Yamamoto, as providing client computers with annotation functions enabling users of the client computers to view

object-based documents with annotations, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

In regards to **claim 72**, Jain doesn't explicitly teach:

- the displaying further comprises a displaying of the annotated image in a browser.

However Yamamoto teaches such use (Fig. 1 #50 Client Web Browser #51, see Annotation, and Web Browser).

Jain and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, and Yamamoto before him or her, to modify the system of Jain to include the teachings of Yamamoto, as providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type

Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

In regards to **claim 73**, Jain doesn't explicitly teach:

- the processor further comprises a processor of a medical imaging device.

However Yamamoto teaches such use (p. 4, [0070], lines 2 – 13, see upon receiving the request previously handled by the step c3, one of sets of viewing information stored on the server 10 which corresponds to the selected name, and then transmits the selected set of viewing information to the client computer 50. The set of viewing information includes: a) document information representing a selected file (document) in a format viewable in the Web browser (e.g., a Hyper-Text Mark-up Language (HTML) file); b) annotation information representing annotations in a format viewable in the Web browser (e.g., an HTML file); and c) a script for allocating the annotations to the file (document) (e.g., a JavaScript)).

Jain and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, and Yamamoto before him or her,

to modify the system of Jain to include the teachings of Yamamoto, as providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

In regards to **claim 74**, Jain doesn't explicitly teach:

- the original image further comprises an original image contained with the image annotation object.

However Yamamoto teaches such use (Fig. 10 #2, On completion of the displaying a location of a target object to be annotated is specified by JavaScript).

Jain and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Jain, and Yamamoto before him or her, to modify the system of Jain to include the teachings of Yamamoto, as providing client computers with annotation functions enabling users of the client computers to view

object-based documents with annotations, and accordingly it would enhance the system of Jain, which is focused on a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, to also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

10. **Claims 28-35, 37, 38, 40-45, 48-50, 57, 58, 62 and 76** are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto, in view of Goede.

In regards to claims **34**, and **45** the rejections above are incorporated, respectively.

In regards to **claim 28**, Yamamoto teaches:

- a template repository that is operable to store one or more non-procedural image annotation templates (p. 4, [0070], lines 2 – 13, see upon receiving the request previously handled by the step c3, one of sets of viewing information stored on the server 10 which corresponds to the selected name, and then transmits the selected set of viewing information to the client computer 50. The set of viewing information includes: a) document information representing a selected file (document) in a format viewable in the Web browser (e.g., a Hyper-Text Mark-up Language (HTML) file); b) annotation information representing annotations in a

format viewable in the Web browser (e.g., an HTML file); and c) a script for allocating the annotations to the file (document) (e.g., a JavaScript)).

- a storer of the one or more non-procedural image annotation templates, operably coupled to the template repository (p. 4, [0070], lines 2 – 13, see upon receiving the request previously handled by the step c3, one of sets of viewing information stored on the server 10 which corresponds to the selected name, and then transmits the selected set of viewing information to the client computer 50. The set of viewing information includes: a) document information representing a selected file (document) in a format viewable in the Web browser (e.g., a Hyper-Text Mark-up Language (HTML) file); b) annotation information representing annotations in a format viewable in the Web browser (e.g., an HTML file); and c) a script for allocating the annotations to the file (document) (e.g., a JavaScript)).
- a selector of the one of the non-procedural image annotation templates, operably coupled to the template repository (p. 4, [0070], lines 2 – 13, see upon receiving the request previously handled by the step c3, one of sets of viewing information stored on the server 10 which corresponds to the selected name, and then transmits the selected set of viewing information to the client computer 50. The set of viewing information includes: a) document information representing a selected file (document) in a format viewable in the Web browser (e.g., a Hyper-Text Mark-up Language (HTML) file); b) annotation information representing annotations in a format viewable in the Web browser (e.g., an HTML file); and c) a script for allocating the annotations to the file (document) (e.g., a JavaScript)).

Yamamoto doesn't explicitly teach:

- the non-procedural image annotation templates each adapted to enable text to be embedded on a medical image.

However, Goede teaches such use (p. 8, [0085], see the deductor (160) is machine process that may or may not be aided by human user input to analyze and deduce new visual and non-visual information from the pre-existing annotated information using a set of defined rules in the illustrative embodiments of the present invention...In the case of a medical image, the deductor (160) may create output that could be read and be integrated into an existing system for cell analysis. The deductor (160) could also create output that is read and applied to a template in a publishing process), and (abstract, lines 1 – 6, see a method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

Yamamoto and Goede are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Yamamoto, and Goede before him or her, to modify the system of Yamamoto to include the teachings of Goede, as a method and system for visually annotating an image, and accordingly it would enhance the system of Yamamoto, which is focused on providing client computers with annotation functions enabling users of the client computers to view object-based

documents with annotations, to define the requirements of a digital non raster-based annotation architecture and annotating methodology for digital images that will serve as a basis for use in a number of exemplary areas: authoring tools, presentation programs, and cataloging systems, as suggested by Goede (P.3, [0035], lines 2 - 6).

In regards to **claim 29**, Yamamoto doesn't explicitly teach:

- the one or more non-procedural image annotation templates further comprises a computed tomography non-procedural image annotation template.

However Goede teaches such use (Fig. 6, and P. 7, [0077], lines 1 – 13, see FIG. 6 is a diagram showing the data flow carried out in accordance with an illustrative embodiment of the present invention. The first step is to extract the image data...Digital information can also consist of color settings, grayscale levels, image pixel dimensions, or the type of image the user is requesting, i.e., TIF, JPEG,DICOM, etc.), and (p. 5, [0056], lines 9 – 13, see The metadata may also include patient information in the case of medical images), (abstract, lines 1 – 6, see A method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

Yamamoto and Goede are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of

ordinary skill in the art, having the teaching of Yamamoto, and Goede before him or her, to modify the system of Yamamoto to include the teachings of Goede, as a method and system for visually annotating an image, and accordingly it would enhance the system of Yamamoto, which is focused on providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, to define the requirements of a digital non raster-based annotation architecture and annotating methodology for digital images that will serve as a basis for use in a number of exemplary areas: authoring tools, presentation programs, and cataloging systems, as suggested by Goede (P.3, [0035], lines 2 - 6).

In regards to **claim 30**, Yamamoto doesn't explicitly teach:

- the one or more non-procedural image annotation templates further comprises a magnetic-resonance non-procedural image annotation template.

However Goede teaches such use (Fig. 6, and P. 7, [0077], lines 1 – 13, see FIG. 6 is a diagram showing the data flow carried out in accordance with an illustrative embodiment of the present invention. The first step is to extract the image data...Digital information can also consist of color settings, grayscale levels, image pixel dimensions, or the type of image the user is requesting, i.e., TIF, JPEG,DICOM, etc.), and (p. 5, [0056], lines 9 – 13, see The metadata may also include patient information in the case of medical images), (abstract, lines 1 – 6, see A method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image

information in a single, non-volatile and portable file or in a separate file from the image).

Yamamoto and Goede are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Yamamoto, and Goede before him or her, to modify the system of Yamamoto to include the teachings of Goede, as a method and system for visually annotating an image, and accordingly it would enhance the system of Yamamoto, which is focused on providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, to define the requirements of a digital non raster-based annotation architecture and annotating methodology for digital images that will serve as a basis for use in a number of exemplary areas: authoring tools, presentation programs, and cataloging systems, as suggested by Goede (P.3, [0035], lines 2 - 6).

In regards to **claim 31**, Yamamoto teaches:

- generate an image annotation executable from a non-procedural image annotation template to annotate images, storing the one or more non-procedural image annotation templates in a template repository (p. 4, [0070], lines 2 – 13, see upon receiving the request previously handled by the step c3, one of sets of viewing information stored on the server 10 which corresponds to the selected name, and then transmits the selected set of viewing information to the client

computer 50. The set of viewing information includes: a) document information representing a selected file (document) in a format viewable in the Web browser (e.g., a Hyper-Text Mark-up Language (HTML) file); b) annotation information representing annotations in a format viewable in the Web browser (e.g., an HTML file); and c) a script for allocating the annotations to the file (document) (e.g., a JavaScript)).

- selecting one of the non-procedural image annotation templates in the template repository (p. 4, [0070], lines 2 – 13, see upon receiving the request previously handled by the step c3, one of sets of viewing information stored on the server 10 which corresponds to the selected name, and then transmits the selected set of viewing information to the client computer 50. The set of viewing information includes: a) document information representing a selected file (document) in a format viewable in the Web browser (e.g., a Hyper-Text Mark-up Language (HTML) file); b) annotation information representing annotations in a format viewable in the Web browser (e.g., an HTML file); and c) a script for allocating the annotations to the file (document) (e.g., a JavaScript)).

Yamamoto doesn't explicitly teach:

- to enable text to be embedded on a medical image.

However, Goede teaches such use (abstract, lines 1 – 6, see a method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside

image information in a single, non-volatile and portable file or in a separate file from the image).

Yamamoto and Goede are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Yamamoto, and Goede before him or her, to modify the system of Yamamoto to include the teachings of Goede, as a method and system for visually annotating an image, and accordingly it would enhance the system of Yamamoto, which is focused on providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, to define the requirements of a digital non raster-based annotation architecture and annotating methodology for digital images that will serve as a basis for use in a number of exemplary areas: authoring tools, presentation programs, and cataloging systems, as suggested by Goede (P.3, [0035], lines 2 - 6).

In regards to **claim 32**, Yamamoto doesn't explicitly teach:

- the one or more non-procedural image annotation templates further comprises a computed tomography non-procedural image annotation template.

However Goede teaches such use (Fig. 6, and P. 7, [0077], lines 1 – 13, see FIG. 6 is a diagram showing the data flow carried out in accordance with an illustrative embodiment of the present invention. The first step is to extract the image data...Digital information can also consist of color settings, grayscale levels, image pixel dimensions, or the type

of image the user is requesting, i.e., TIF, JPEG, DICOM, etc.), and (p. 5, [0056], lines 9 – 13, see The metadata may also include patient information in the case of medical images), (abstract, lines 1 – 6, see A method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

Yamamoto and Goede are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Yamamoto, and Goede before him or her, to modify the system of Yamamoto to include the teachings of Goede, as a method and system for visually annotating an image, and accordingly it would enhance the system of Yamamoto, which is focused on providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, to define the requirements of a digital non raster-based annotation architecture and annotating methodology for digital images that will serve as a basis for use in a number of exemplary areas: authoring tools, presentation programs, and cataloging systems, as suggested by Goede (P.3, [0035], lines 2 - 6).

In regards to **claim 33**, Yamamoto doesn't explicitly teach:

- the one or more non-procedural image annotation templates further comprises a magnetic-resonance non-procedural image annotation template.

However Goede teaches such use (Fig. 6, and P. 7, [0077], lines 1 – 13, see FIG. 6 is a diagram showing the data flow carried out in accordance with an illustrative embodiment of the present invention. The first step is to extract the image data...Digital information can also consist of color settings, grayscale levels, image pixel dimensions, or the type of image the user is requesting, i.e., TIF, JPEG, DICOM, etc.), and (p. 5, [0056], lines 9 – 13, see The metadata may also include patient information in the case of medical images), (abstract, lines 1 – 6, see A method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

Yamamoto and Goede are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Yamamoto, and Goede before him or her, to modify the system of Yamamoto to include the teachings of Goede, as a method and system for visually annotating an image, and accordingly it would enhance the system of Yamamoto, which is focused on providing client computers with annotation functions enabling users of the client computers to view object-based

documents with annotations, to define the requirements of a digital non raster-based annotation architecture and annotating methodology for digital images that will serve as a basis for use in a number of exemplary areas: authoring tools, presentation programs, and cataloging systems, as suggested by Goede (P.3, [0035], lines 2 - 6).

In regards to **claim 34**, Yamamoto teaches:

- receive the image annotation executable, an image and an image annotation object, the image annotation object containing text (p. 4, [0070], lines 2 – 13, see upon receiving the request previously handled by the step c3, one of sets of viewing information stored on the server 10 which corresponds to the selected name, and then transmits the selected set of viewing information to the client computer 50. The set of viewing information includes: a) document information representing a selected file (document) in a format viewable in the Web browser (e.g., a Hyper-Text Mark-up Language (HTML) file); b) annotation information representing annotations in a format viewable in the Web browser (e.g., an HTML file); and c) a script for allocating the annotations to the file (document) (e.g., a JavaScript)).
- to execute instructions contained in the image annotation executable and using text from the image annotation object (p. 4, [0070], lines 6 – 13, see The set of viewing information includes: a) document information representing a selected file (document) in a format viewable in the Web browser (e.g., a Hyper-Text Mark-up Language (HTML) file); b) annotation information representing

annotations in a format viewable in the Web browser (e.g., an HTML file); and c)
a script for allocating the annotations to the file (document)(e.g., a JavaScript)).

- the image viewer being operable to generate an annotated image that is annotated with the text from the image annotation object (Fig. 1 #50 Client Web Browser #51, see Annotation, and Web Browser).

Yamamoto doesn't explicitly teach:

- to be embedded on a medical image, the image viewer being operable.

However, Goede teaches such use (abstract, lines 1 – 6, see a method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

Yamamoto and Goede are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Yamamoto, and Goede before him or her, to modify the system of Yamamoto to include the teachings of Goede, as a method and system for visually annotating an image, and accordingly it would enhance the system of Yamamoto, which is focused on providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, to define the requirements of a digital non raster-based annotation architecture and annotating methodology for digital images that will serve as

a basis for use in a number of exemplary areas: authoring tools, presentation programs, and cataloging systems, as suggested by Goede (P.3, [0035], lines 2 - 6).

In regards to **claim 35**, Yamamoto doesn't explicitly teach:

- the instructions further comprise computer instructions that are native to a processor, the processor being operably coupled through a bus to the computer-accessible medium.

However Goede teaches such use (Fig. 6, and P. 7, [0077], lines 1 – 13, see FIG. 6 is a diagram showing the data flow carried out in accordance with an illustrative embodiment of the present invention. The first step is to extract the image data...Digital information can also consist of color settings, grayscale levels, image pixel dimensions, or the type of image the user is requesting, i.e., TIF, JPEG, DICOM, etc.), and (p. 5, [0056], lines 9 – 13, see The metadata may also include patient information in the case of medical images), (abstract, lines 1 – 6, see A method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

Yamamoto and Goede are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Yamamoto, and Goede before him or

her, to modify the system of Yamamoto to include the teachings of Goede, as a method and system for visually annotating an image, and accordingly it would enhance the system of Yamamoto, which is focused on providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, to define the requirements of a digital non raster-based annotation architecture and annotating methodology for digital images that will serve as a basis for use in a number of exemplary areas: authoring tools, presentation programs, and cataloging systems, as suggested by Goede (P.3, [0035], lines 2 - 6).

In regards to **claim 37**, Yamamoto teaches:
the image annotation executable further comprises an annotation presentation description (p. 4, [0070], lines 6 – 13, see The set of viewing information includes: a) document information representing a selected file (document) in a format viewable in the Web browser (e.g., a Hyper-Text Mark-up Language (HTML) file); b) annotation information representing annotations in a format viewable in the Web browser (e.g., an HTML file); and c) a script for allocating the annotations to the file (document) (e.g., a JavaScript)).

In regards to **claim 38**, Yamamoto teaches:
the image annotation object further comprises the image (Fig. 10 #2, On completion of the displaying a location of a target object to be annotated is specified by JavaScript).

In regards to **claim 40**, Yamamoto teaches:

the image further comprises an unannotated image (Fig. 10 #2, On completion of the displaying a location of a target object to be annotated is specified by JavaScript).

In regards to **claim 41**, Yamamoto teaches:

the image annotation executable further comprises: an object to select a style class object that is appropriate for imaging of a modality; and an instantiated style class object (p. 4, [0070], lines 2 – 13, see upon receiving the request previously handled by the step c3, one of sets of viewing information stored on the server 10 which corresponds to the selected name, and then transmits the selected set of viewing information to the client computer 50. The set of viewing information includes: a) document information representing a selected file (document) in a format viewable in the Web browser (e.g., a Hyper-Text Mark-up Language (HTML) file); b) annotation information representing annotations in a format viewable in the Web browser (e.g., an HTML file); and c) a script for allocating the annotations to the file (document) (e.g., a JavaScript)).

In regards to **claim 42**, Yamamoto doesn't explicitly teach:

- the modality is selected from a group consisting of magnetic resonance, computed tomography, X-ray, ultrasound and positron emission tomography.

However Goede teaches such use (Fig. 6, and P. 7, [0077], lines 1 – 13, see FIG. 6 is a diagram showing the data flow carried out in accordance with an illustrative embodiment of the present invention. The first step is to extract the image data...Digital information

can also consist of color settings, grayscale levels, image pixel dimensions, or the type of image the user is requesting, i.e., TIF, JPEG, DICOM, etc.), and (p. 5, [0056], lines 9 – 13, see The metadata may also include patient information in the case of medical images), (abstract, lines 1 – 6, see A method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

Yamamoto and Goede are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Yamamoto, and Goede before him or her, to modify the system of Yamamoto to include the teachings of Goede, as a method and system for visually annotating an image, and accordingly it would enhance the system of Yamamoto, which is focused on providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, to define the requirements of a digital non raster-based annotation architecture and annotating methodology for digital images that will serve as a basis for use in a number of exemplary areas: authoring tools, presentation programs, and cataloging systems, as suggested by Goede (P.3, [0035], lines 2 - 6).

In regards to **claim 43**, Yamamoto teaches:

- an object to receive parsed annotation data and the image from the image annotation object through a host image annotation parser (p. 4, [0070], lines 2 – 13, see upon receiving the request previously handled by the step c3, one of sets of viewing information stored on the server 10 which corresponds to the selected name, and then transmits the selected set of viewing information to the client computer 50. The set of viewing information includes: a) document information representing a selected file (document) in a format viewable in the Web browser (e.g., a Hyper-Text Mark-up Language (HTML) file); b) annotation information representing annotations in a format viewable in the Web browser (e.g., an HTML file); and c) a script for allocating the annotations to the file (document) (e.g., a JavaScript)).
- to forward the image and text to the style class object that is appropriate for imaging of a modality (p. 4, [0070], lines 2 – 13, see upon receiving the request previously handled by the step c3, one of sets of viewing information stored on the server 10 which corresponds to the selected name, and then transmits the selected set of viewing information to the client computer 50. The set of viewing information includes: a) document information representing a selected file (document) in a format viewable in the Web browser (e.g., a Hyper-Text Mark-up Language (HTML) file); b) annotation information representing annotations in a format viewable in the Web browser (e.g., an HTML file); and c) a script for allocating the annotations to the file (document) (e.g., a JavaScript)).

Yamamoto doesn't explicitly teach:

- an object to invoke one or more methods in the object that selects a style class object that is appropriate for imaging of a modality

However Goede teaches such use (Fig. 6, and P. 7, [0077], lines 1 – 13, see FIG. 6 is a diagram showing the data flow carried out in accordance with an illustrative embodiment of the present invention. The first step is to extract the image data...Digital information can also consist of color settings, grayscale levels, image pixel dimensions, or the type of image the user is requesting, i.e., TIF, JPEG, DICOM, etc.), and (p. 5, [0056], lines 9 – 13, see The metadata may also include patient information in the case of medical images), (abstract, lines 1 – 6, see A method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

Yamamoto and Goede are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Yamamoto, and Goede before him or her, to modify the system of Yamamoto to include the teachings of Goede, as a method and system for visually annotating an image, and accordingly it would enhance the system of Yamamoto, which is focused on providing client computers with annotation functions enabling users of the client computers to view object-based

documents with annotations, to define the requirements of a digital non raster-based annotation architecture and annotating methodology for digital images that will serve as a basis for use in a number of exemplary areas: authoring tools, presentation programs, and cataloging systems, as suggested by Goede (P.3, [0035], lines 2 - 6).

In regards to **claim 44**, Yamamoto teaches:

- a method to forward the image and text to a host text drawer in the viewer.
(Fig. 10 #2, On completion of the displaying a location of a target object to be annotated is specified by JavaScript).
- a method to forward the image and text to a graphic utilities object that is native to an operating system that is running on a processor that is operably coupled to the computer-accessible medium, whereupon the graphic utilities object is to generate the annotated image (Fig. 1 #50 Client Web Browser #51, see Annotation, and Web Browser).

In regards to **claim 45**, Yamamoto teaches:

- an image annotation object and an annotation presentation description, the image annotation object having an image, the annotation presentation description having instructions that are native to a processor that is operably coupled to the computer accessible medium (p. 4, [0070], lines 2 – 13, see upon receiving the request previously handled by the step c3, one of sets of viewing information stored on the server 10 which corresponds to the selected name, and

then transmits the selected set of viewing information to the client computer 50.

The set of viewing information includes: a) document information representing a selected file (document) in a format viewable in the Web browser (e.g., a Hyper-Text Mark-up Language (HTML) file); b) annotation information representing annotations in a format viewable in the Web browser (e.g., an HTML file); and c) a script for allocating the annotations to the file (document) (e.g., a JavaScript)).

- receiving the annotation presentation description and the image annotation object (p. 4, [0070], lines 6 – 13, see The set of viewing information includes: a) document information representing a selected file (document) in a format viewable in the Web browser (e.g., a Hyper-Text Mark-up Language (HTML) file); b) annotation information representing annotations in a format viewable in the Web browser (e.g., an HTML file); and c) a script for allocating the annotations to the file (document)(e.g., a JavaScript)).
- invoking the native instructions contained in the annotation presentation description and using text from the image annotation object, to generate and view the annotated medical image that is annotated with the text from the image annotation object (Fig. 1 #50 Client Web Browser #51, see Annotation, and Web Browser).

Yamamoto doesn't explicitly teach:

- generate and view an annotated medical image, from

However Goede teaches such use (Fig. 6, and P. 7, [0077], lines 1 – 13, see FIG. 6 is a diagram showing the data flow carried out in accordance with an illustrative embodiment

of the present invention. The first step is to extract the image data...Digital information can also consist of color settings, grayscale levels, image pixel dimensions, or the type of image the user is requesting, i.e., TIF, JPEG, DICOM, etc.), and (p. 5, [0056], lines 9 – 13, see The metadata may also include patient information in the case of medical images), (abstract, lines 1 – 6, see A method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

Yamamoto and Goede are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Yamamoto, and Goede before him or her, to modify the system of Yamamoto to include the teachings of Goede, as a method and system for visually annotating an image, and accordingly it would enhance the system of Yamamoto, which is focused on providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, to define the requirements of a digital non raster-based annotation architecture and annotating methodology for digital images that will serve as a basis for use in a number of exemplary areas: authoring tools, presentation programs, and cataloging systems, as suggested by Goede (P.3, [0035], lines 2 - 6).

In regards to **claim 48**, Yamamoto doesn't explicitly teach:

- the annotation presentation description further comprises executable instructions capable of directing the processor to perform: selecting a style class object that is appropriate for imaging of a modality; and instantiating the selected style class object.

However Goede teaches such use (Fig. 6, and P. 7, [0077], lines 1 – 13, see FIG. 6 is a diagram showing the data flow carried out in accordance with an illustrative embodiment of the present invention. The first step is to extract the image data...Digital information can also consist of color settings, grayscale levels, image pixel dimensions, or the type of image the user is requesting, i.e., TIF, JPEG, DICOM, etc.), and (p. 5, [0056], lines 9 – 13, see The metadata may also include patient information in the case of medical images), (abstract, lines 1 – 6, see A method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

Yamamoto and Goede are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Yamamoto, and Goede before him or her, to modify the system of Yamamoto to include the teachings of Goede, as a method and system for visually annotating an image, and accordingly it would

enhance the system of Yamamoto, which is focused on providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, to define the requirements of a digital non raster-based annotation architecture and annotating methodology for digital images that will serve as a basis for use in a number of exemplary areas: authoring tools, presentation programs, and cataloging systems, as suggested by Goede (P.3, [0035], lines 2 - 6).

In regards to **claim 49**, Yamamoto doesn't explicitly teach:

- the modality is selected from a group consisting of magnetic resonance, computed tomography, X-ray, ultrasound and positron emission tomography.

However Goede teaches such use (Fig. 6, and P. 7, [0077], lines 1 – 13, see FIG. 6 is a diagram showing the data flow carried out in accordance with an illustrative embodiment of the present invention. The first step is to extract the image data...Digital information can also consist of color settings, grayscale levels, image pixel dimensions, or the type of image the user is requesting, i.e., TIF, JPEG, DICOM, etc.), and (p. 5, [0056], lines 9 – 13, see The metadata may also include patient information in the case of medical images), (abstract, lines 1 – 6, see A method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

Yamamoto and Goede are analogous art because they are from the same field

of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Yamamoto, and Goede before him or her, to modify the system of Yamamoto to include the teachings of Goede, as a method and system for visually annotating an image, and accordingly it would enhance the system of Yamamoto, which is focused on providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, to define the requirements of a digital non raster-based annotation architecture and annotating methodology for digital images that will serve as a basis for use in a number of exemplary areas: authoring tools, presentation programs, and cataloging systems, as suggested by Goede (P.3, [0035], lines 2 - 6).

In regards to **claim 50**, Yamamoto teaches:

- receiving parsed annotation data and the image from the image annotation object through a host image annotation parser (p. 4, [0070], lines 2 – 13, see upon receiving the request previously handled by the step c3, one of sets of viewing information stored on the server 10 which corresponds to the selected name, and then transmits the selected set of viewing information to the client computer 50. The set of viewing information includes: a) document information representing a selected file (document) in a format viewable in the Web browser (e.g., a Hyper-Text Mark-up Language (HTML) file); b) annotation information representing

annotations in a format viewable in the Web browser (e.g., an HTML file); and c)
a script for allocating the annotations to the file (document) (e.g., a JavaScript)).

- forwarding the image and text to a graphic utilities object that is native to an operating system that is running on the processor, whereupon the graphic utilities object is to generate and view the annotated image (Fig. 1 #50 Client Web Browser #51, see Annotation, and Web Browser).

In regards to **claim 57**, Yamamoto teaches:

- a processor; a bus operably coupled to the processor and a computer-accessible medium comprising a viewer that is operable to access computer instructions that are native to the processor, the computer instructions having been generated by a processor on another computer system, the computer-accessible medium being operably coupled to the processor through the bus (Fig. 1, #40 bi-directional arrows from #10 Web server to multiple clients, #50 Clients), (p. 2, [0022], lines 1 – 8, see The use of conventional software for an annotation function allows one computer, which uses the same type of software for the annotation function that has been used by another computer for attaching an annotation to an electronic document, to display the electronic document with the attached annotation on the display screen and allows a user of the one computer to view the electronic document with the attached annotation), and (p. 2, [0024], lines 1 – 5, see an object of the present invention is to provide a method for causing a server to provide a plurality of client computers with annotation

functions, thereby to allow users of the client computers to communicate with each other using annotations).

Yamamoto doesn't explicitly teach:

- the computer instructions being adapted to enable text to be embedded on a medical image.

However, Goede teaches such use (abstract, lines 1 – 6, see a method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

Yamamoto and Goede are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Yamamoto, and Goede before him or her, to modify the system of Yamamoto to include the teachings of Goede, as a method and system for visually annotating an image, and accordingly it would enhance the system of Yamamoto, which is focused on providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, to define the requirements of a digital non raster-based annotation architecture and annotating methodology for digital images that will serve as a basis for use in a number of exemplary areas: authoring tools, presentation programs, and cataloging systems, as suggested by Goede (P.3, [0035], lines 2 - 6).

In regards to **claim 58**, Yamamoto teaches:

the viewer further comprises a browser and the computer instructions further comprise computer instructions encapsulated in a browser plug-in component (Fig. 1 #50 Client Web Browser #51, see Annotation, and Web Browser).

In regards to **claim 62**, Yamamoto doesn't explicitly teach:

- an encapsulation of medical image annotation computer instructions.

However, Goede teaches such use (abstract, lines 1 – 6, see a method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

Yamamoto teaches:

- native computer instructions (p. 3, [0041], see displaying an annotation for storing on the server annotation data transmitted from the client computer in an XML format and then outputting to the client computer desired information that has been read out from the server, together with the HTML for the source-view). It is noted that Applicant defines "APD", at/on p. 2, [0014], as "procedural image annotation source code into an annotation presentation description (APD) having computer instructions for image annotation that are native to an imaging system", and p. 7, [0073], "The APD Language is based on the Extensible Markup

Language (XML) standard, XML being published by the World Wide Web Consortium... The XML portion is defined below using Document Type Definition (DTD)", which is very much the same as Yamamoto's disclosed use of XML (emphasis added).

Yamamoto doesn't explicitly teach:

- a viewer that is operable to access the encapsulated medical image annotation computer instructions., the instructions programmed to annotate a medical image with embedded text.

However, Goede teaches such use (p. 8, [0085], see the deductor (160) is machine process that may or may not be aided by human user input to analyze and deduce new visual and non-visual information from the pre-existing annotated information using a set of defined rules in the illustrative embodiments of the present invention...In the case of a medical image, the deductor (160) may create output that could be read and be integrated into an existing system for cell analysis. The deductor (160) could also create output that is read and applied to a template in a publishing process), and (abstract, lines 1 – 6, see a method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

Yamamoto and Goede are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of

ordinary skill in the art, having the teaching of Yamamoto, and Goede before him or her, to modify the system of Yamamoto to include the teachings of Goede, as a method and system for visually annotating an image, and accordingly it would enhance the system of Yamamoto, which is focused on providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, to define the requirements of a digital non raster-based annotation architecture and annotating methodology for digital images that will serve as a basis for use in a number of exemplary areas: authoring tools, presentation programs, and cataloging systems, as suggested by Goede (P.3, [0035], lines 2 - 6).

In regards to **claim 76**, Yamamoto teaches:

- forwarding the image annotation executable through the Internet to the medical imaging system (Fig. 1, #40 bi-directional arrows from server to clients, #50 Clients, #10 Web server), and (p. 4, [0063], lines 5 – 9, see a connection between the client computer 50 and the server 10 via the network 40 would allow a user of the client computer 50 to access and utilize a Web site (for sending Web pages) built on the server 10).

Yamamoto doesn't explicitly teach:

- generating on a development system an image annotation executable that includes computer instructions that are native to a processor of the medical imaging system.

However, Goede teaches such use (Fig. 6, and P. 7, [0077], lines 1 – 13, see FIG. 6 is a diagram showing the data flow carried out in accordance with an illustrative embodiment of the present invention. The first step is to extract the image data...Digital information can also consist of color settings, grayscale levels, image pixel dimensions, or the type of image the user is requesting, i.e., TIF, JPEG, DICOM, etc.), and (p. 5, [0056], lines 9 – 13, see The metadata may also include patient information in the case of medical images), (abstract, lines 1 – 6, see A method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image).

Yamamoto and Goede are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Yamamoto, and Goede before him or her, to modify the system of Yamamoto to include the teachings of Goede, as a method and system for visually annotating an image, and accordingly it would enhance the system of Yamamoto, which is focused on providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, to define the requirements of a digital non raster-based annotation architecture and annotating methodology for digital images that will serve as

a basis for use in a number of exemplary areas: authoring tools, presentation programs, and cataloging systems, as suggested by Goede (P.3, [0035], lines 2 - 6).

11. **Claims 36 and 39** are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto, in view of Goede, in further view of Jain.

In regards to claim **34**, the rejections above are incorporated, respectively.

In regards to **claim 36**, Yamamoto and Goede, in particular Yamamoto doesn't explicitly teach:

- the image annotation executable further comprises an image annotation executable that is compiled from a non-procedural image annotation template.

However Jain teaches such use (Fig. 1, #104 XML DTD, #108 XML_To_JAVA, #110 Java Class, #112 Java Class File, #120 Program, #124 Java Object), and (p. 1, [0011-0012], see Techniques are disclosed for converting an XML document to an object in an object-oriented language, thereby providing a structured, programmatic, consistent, powerful, and in-memory method for accessing the data in the XML document... In one embodiment, a translation tool converts an XML DTD associated with the XML document to Java classes from which a Java object corresponding to the XML document is instantiated).

Yamamoto, Goede and Jain are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Yamamoto, Goede and Jain before him or

her, to modify the system of Yamamoto and Goede, in particular Yamamoto, to include the teachings of Jain, as a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, and accordingly it would enhance the system of Yamamoto, which is focused on providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, to utilize an non-procedural executable, as suggested by Jain (Fig. 1, p. 1, [0011-0012]).

In regards to **claim 39**, Yamamoto and Goede, in particular Yamamoto doesn't

- the image annotation object further comprises an image annotation object that conforms to standard that defines data elements in object-oriented terms, each object having a unique tag, name, characteristics and semantics.

However Jain teaches such use (Fig. 1, #104 XML DTD, #108 XML_To_JAVA, #110 Java Class, #112 Java Class File, #120 Program, #124 Java Object), and (p. 1, [0011-0012], see Techniques are disclosed for converting an XML document to an object in an object-oriented language, thereby providing a structured, programmatic, consistent, powerful, and in-memory method for accessing the data in the XML document... In one embodiment, a translation tool converts an XML DTD associated with the XML document to Java classes from which a Java object corresponding to the XML document is instantiated).

Yamamoto, Goede and Jain are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Yamamoto, Goede and Jain before him or her, to modify the system of Yamamoto and Goede, in particular Yamamoto, to include the teachings of Jain, as a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, and accordingly it would enhance the system of Yamamoto, which is focused on providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, to utilize an non-procedural executable, as suggested by Jain (Fig. 1, p. 1, [0011-0012]).

12. **Claims 46 and 47** are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto, in view of Jain.

In regards to claim **45**, the rejections above are incorporated, respectively.

In regards to **claim 46**, Yamamoto doesn't explicitly teach:

- the annotation presentation description further comprises an annotation presentation description that is compiled from a non-procedural image annotation template.

However Jain teaches such use (Fig. 1, #104 XML DTD, #108 XML_To_JAVA, #110 Java Class, #112 Java Class File, #120 Program, #124 Java Object), and (p. 1, [0011-

0012], see Techniques are disclosed for converting an XML document to an object in an object-oriented language, thereby providing a structured, programmatic, consistent, powerful, and in-memory method for accessing the data in the XML document... In one embodiment, a translation tool converts an XML DTD associated with the XML document to Java classes from which a Java object corresponding to the XML document is instantiated).

Yamamoto and Jain are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Yamamoto, and Jain before him or her, to modify the system of Yamamoto to include the teachings of Jain, as a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, and accordingly it would enhance the system of Yamamoto, which is focused on providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, to utilize a non-procedural executable, as suggested by Jain (Fig. 1, p. 1, [0011-0012]).

In regards to **claim 47**, Yamamoto doesn't explicitly teach:

- further comprises an image annotation object that conforms to standard that defines data elements in object-oriented terms, each object having a unique tag, name, characteristics and semantics.

However Jain teaches such use (Fig. 1, #104 XML DTD, #108 XML_To_JAVA, #110 Java Class, #112 Java Class File, #120 Program, #124 Java Object), and (p. 1, [0011-0012], see Techniques are disclosed for converting an XML document to an object in an object-oriented language, thereby providing a structured, programmatic, consistent, powerful, and in-memory method for accessing the data in the XML document... In one embodiment, a translation tool converts an XML DTD associated with the XML document to Java classes from which a Java object corresponding to the XML document is instantiated).

Yamamoto and Jain are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Yamamoto, and Jain before him or her, to modify the system of Yamamoto to include the teachings of Jain, as a translation tool to converts and XML Document Type Definition file associated with an XML document to Java classes from which a Java object corresponding to the XML document is instantiated, and accordingly it would enhance the system of Yamamoto, which is focused on providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, to utilize a non-procedural executable, as suggested by Jain (Fig. 1, p. 1, [0011-0012]).

13. **Claim 63** is rejected under 35 U.S.C. 103(a) as being unpatentable over Goede, in view of Yamamoto.

In regards to claim **62**, the rejections above are incorporated, respectively.

In regards to **claim 63**, Goede doesn't explicitly teach:

- the encapsulated image annotation computer instructions further comprise arithmetic calculations and special string operations for annotation that are native to a processor that is operably coupled to the computer-accessible medium

However Yamamoto teaches such use (p. 2, [0026 – 0030], see allows a user of the client computer to view a document with an attached annotation on a screen of the client computer...The viewing information includes document information, annotation information, and a script...The aforementioned annotation information represents the annotation in a format that allows the user to view the annotation by the Web browser. More particularly, the annotation information includes position information defining a position that the annotation is to be displayed by the Web browser with the annotation being attached to the document in association with a corresponding one of the plurality of objects...The aforementioned script is to be executed by the client computer for allocating the annotation to the document...The "annotation" may be achieved by displaying a particular comment or note at a particular position on a target document, by underlining, emphasizing, highlighting, coloring, or enclosing a particular portion of a target document, etc..).

Goede and Yamamoto are analogous art because they are from the same field of endeavor, annotation and translation of documents and images.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teaching of Goede, and Yamamoto before him or her,

to modify the system of Goede to include the teachings of Yamamoto, as providing client computers with annotation functions enabling users of the client computers to view object-based documents with annotations, and accordingly it would enhance the system of Goede, which is focused on a method and system for visually annotating an image, to also be effectively utilized also for a separate type of a document to be annotated. Such a document may be a source program written in another programming language, a document related to software, a general document, or the like, as suggested by Yamamoto (P.11, [0183], lines 4 - 8).

Response to Arguments

14. Applicant's arguments with respect to claims 1-10, and 12-81, on pages 21-31, of the response, have been fully considered but they are not persuasive, and as disclosed above and below, Yamamoto, Jain and Goede further teaches such use.

Applicant contends with respect to claims 26 and 27 (p. 24, 4th para. – p. 25, 1st para.), that "Applicant submits that the recitations of claim 26 are tied to an apparatus and also claim various apparatus for implementing the method. Therefore, Claim 26 is tied to a particular machine as required by Bilski and the BPAI decision Ex Parte Hayworth. Applicant therefore requests that the rejection of Claims 26 and 27 be withdrawn". Examiner respectfully disagrees and notes that in light of the specification, Applicant's term "apparatus" is reasonably interpreted as software and does not necessarily constitute a "particular machine or apparatus" such as intended in Bilski, and that software and computer programs per se do not fall within

any category of statutory subject matter. Examiner suggests amending the claim to positively recite that the system comprises hardware.

Applicant contends with respect to claim 62 (p. 25, 3rd para. – p. 26, 1st para.), that "Goede does not describe a computer-accessible medium that includes "an encapsulation of medical image annotation native computer instructions," (emphasis original). It is noted, as disclosed above, that Goede may not explicitly disclose such use, however, Yamamoto teaches such use at/on p. 3, [0041], "displaying an annotation for storing on the server annotation data transmitted from the client computer in an XML format and then outputting to the client computer desired information that has been read out from the server, together with the HTML for the source-view" (emphasis added). It is also noted that Applicant defines "APD", at/on p. 2, [0014], as "procedural image annotation source code into an annotation presentation description (APD) having computer instructions for image annotation that are native to an imaging system", and p. 7, [0073], "The APD Language is based on the Extensible Markup Language (XML) standard, XML being published by the World Wide Web Consortium... The XML portion is defined below using Document Type Definition (DTD)", which is very much the same as Yamamoto's disclosed use of XML (emphasis added).

Applicant contends with respect to claim 62 (p. 26, 1st para.), that "Goede also does not describe a viewer that is operable to access the encapsulated medical image annotation computer instructions". Examiner respectfully disagree, Goede teaches such use at/on abstract, lines 1 – 6, see a method and system for visually annotating an image (emphasis added). It is noted Goede's disclosed invention would be inoperable

without a "viewer" to "visually annotate an image". In addition, Goede's disclosed invention would also be inoperable without "access/ing" an image to "visually annotate" the image.

Applicant contends with respect to claim 75 (p. 26, 3rd para. – p. 27, 1st para), that "Yamamoto does not describe an encapsulation of medical image annotation native computer instructions as recited in Claim 75". Examiner respectfully disagrees. The features with respect to which the Applicant relies (i.e. "an encapsulation of medical image annotation native computer instructions") is not recited in the rejected claims (emphasis added). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims.

Applicant contends with respect to claim 75, 64, and 62 (p. 27, 2nd para. – p. 28, 2nd para), that "HTML formal (sic) is NOT native to the processor, e.g. computer 50. Therefore, Claim 75 is submitted to be patentable over Yamamoto... Goede does not describe a computer- accessible medium that "invokes executable instructions that are native to the processor"... "Goede does not describe" the use of "image annotation native computer instruction"... "Jain does not make up for this deficiency" (emphasis original). Examiner respectfully disagrees, as disclosed above with respect to the response to claim 62, and below Applicant defines "APD", at/on p. 2, [0014], as "procedural image annotation source code into an annotation presentation description (APD) having computer instructions for image annotation that are native to an imaging system", and p. 7, [0073], "The APD Language is based on the Extensible Markup Language (XML) standard, XML being published by the World Wide Web Consortium...

The XML portion is defined below using Document Type Definition (DTD)", which is very much the same as Yamamoto's disclosed use of XML (emphasis added).

Applicant contends with respect to claim 75, 64, and 62 (p. 28, 2nd para), that "Applicant submits that neither the Jain reference is not concerned with, nor does the Jain reference describe "generating an annotated medical image that is annotated with the text from the image annotation object" as asserted in the Office Action". Examiner respectfully disagree, and notes that Goede discloses the use of medical imaging at/on abstract, lines 1 – 6, "a method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image", and p. 8, [0085], "the deductor (160) is machine process that may or may not be aided by human user input to analyze and deduce new visual and non-visual information from the pre-existing annotated information using a set of defined rules in the illustrative embodiments of the present invention...In the case of a medical image, the deductor (160) may create output that could be read and be integrated into an existing system for cell analysis. The deductor (160) could also create output that is read and applied to a template in a publishing process" (emphasis added).

Applicant contends with respect to claim 75, 64, and 62 (p. 28, 3rd – 4th para), that "the HTML mark up tags described by Jain are NOT annotations, nor is there any reasonable rationale for using the known mark up tags as annotations on an image since markup tags are not shown on the WEB page. Therefore, Applicant submits that

Claim 64 is allowable over the combination of Jain and Goede". Examiner respectfully disagrees and notes as disclosed above and below, Yamamoto discloses such use at/on p. 3, [0041], "displaying an annotation for storing on the server annotation data transmitted from the client computer in an XML format and then outputting to the client computer desired information that has been read out from the server, together with the HTML for the source-view". It is noted that Applicant defines "APD", at/on p. 2, [0014], as "procedural image annotation source code into an annotation presentation description (APD) having computer instructions for image annotation that are native to an imaging system", and p. 7, [0073], "The APD Language is based on the Extensible Markup Language (XML) standard, XML being published by the World Wide Web Consortium... The XML portion is defined below using Document Type Definition (DTD)", which is very much the same as Yamamoto's disclosed use of XML (emphasis added).

Applicant contends with respect to claims 1-10, 12-25, 51-55, 55-61, 65-69 and 77 (p. 29, 2nd – 3rd para), that "neither Jain nor Goede teach a translator being operable to translate the non-procedural image annotation template to image annotation source code."... "Yamamoto does not make up for these deficiencies"... because "Applicant submits that the HTML format is NOT native to the processor, e.g. computer 50. Therefore, Claim 1 is submitted to be patentable over the combination of Jain, Goede, and Yamamoto" (emphasis added). Examiner respectfully disagrees, and as noted above and below, Applicant defines "APD", at/on p. 2, [0014], as "procedural image annotation source code into an annotation presentation description (APD) having

computer instructions for image annotation that are native to an imaging system", and p. 7, [0073], "The APD Language is based on the Extensible Markup Language (XML) standard, XML being published by the World Wide Web Consortium... The XML portion is defined below using Document Type Definition (DTD)", which is very much the same as Yamamoto's disclosed use of XML (emphasis added). Yamamoto discloses such use at/on p. 3, [0041], "displaying an annotation for storing on the server annotation data transmitted from the client computer in an XML format and then outputting to the client computer desired information that has been read out from the server, together with the HTML for the source-view" (emphasis added).

Applicant contends with respect to claims 2-10, 12-25, 51-55, 55-61, 65-69 and 77 (p. 29, last para. – p. 31, 1st para), that "As best understood the term 'DOM' as used by Jain is an acronym for the term 'Domain'... In this statement, 'DICOM' is a type of DOM, the Examiner appears to be taking Official Notice regarding the use of the term 'DOM'. If the Examiner is taking Official Notice, for example, of facts in the Examiner's personal knowledge rather than the prior art, Applicants respectfully traverse the Examiner's assertions". Examiner respectfully disagrees, and notes as disclosed in the Microsoft Computer Dictionary, Fifth Edition, p. 217, "Document Object Module... In the Document Object Model, or DOM, a document is presented as a logical structure rather than as a collection of tagged words... DOM is a means of defining a document as a treelike hierarch of nodes in which the document is an object containing other objects such as images and forms" (emphasis added). It is also noted, that it would have been obvious to one of ordinary skill in the art, that as disclosed in Jain's Fig. 6, that Java is

converted to DOM (Document Object Module), rather than a "Domain", as Applicants contends. Moreover, Goede discloses the use of annotations and "DICOM" images at/on p. 7, [0077], see "for annotation in accordance with the illustrative embodiments of the present invention. Digital information can also consist of color settings, grayscale levels, image pixel dimensions, or the type of image the user is requesting, i.e., TIF, JPEG, DICOM, etc." (emphasis added).

Applicant contends with respect to claims 2-10, 12-25, 51-55, 55-61, 65-69 and 77 (p. 31, 3rd para. – p. 32, 1st para), that "Jain describes 'translating an XML document to an object in an object-oriented language so that content of the XML document can be programmatically accessed.' As discussed above, Jain does NOT describe 'a non-procedural image annotation template, the translator being operable to translate the non-procedural image annotation template to image annotation source code; and a compiler operably coupled to the translator, the compiler being operable to receive the image annotation source code and to compile the source code into an image annotation executable'" (emphasis original). Examiner respectfully disagrees, and as noted above and below, Applicant defines "APD", at/on p. 2, [0014], as "procedural image annotation source code into an annotation presentation description (APD) having computer instructions for image annotation that are native to an imaging system", and p. 7, [0073], "The APD Language is based on the Extensible Markup Language (XML) standard. XML being published by the World Wide Web Consortium... The XML portion is defined below using Document Type Definition (DTD)", which is very much the same as Yamamoto's disclosed use of XML (emphasis added). Yamamoto

discloses such use at/on p. 3, [0041], "displaying an annotation for storing on the server annotation data transmitted from the client computer in an XML format and then outputting to the client computer desired information that has been read out from the server, together with the HTML for the source-view" (emphasis added). In addition, it would have been obvious to one of ordinary skill in the art at the time of the invention, that Jain's "mark up tags" can describe image annotations to be displayed. Moreover, it would have been obvious to one of ordinary skill in the art at the time of the invention, that the XML documents can contain "images/medical images".

Applicant contends with respect to claims 28-35, 37, 38, 40-45, 48-50, 57, 58, and 76 (p. 32, 3rd para. – p. 33, 2nd para), that "Yamamoto does NOT describe or suggest that the system includes a template repository, as recited in Claim 28, that stores non-procedural image annotation templates. Nor does Yamamoto describe that a template may be selected from the template repository". Examiner respectfully disagrees, Examiner respectfully disagrees, and notes that Yamamoto discloses the use of a repository at/on p. 9, [0148], lines 10 – 12, "the JX-model refers to a model of an XML repository of a Java source program", and Goede discloses the use of storing non-procedural image annotation templates at/on abstract, lines 1 – 6, "a method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image". Examiner notes that it would have been obvious to

one of ordinary skill in the art at the time of the invention, that if the files are "stored", then they will have to be "selected" for them to be utilized.

Applicant contends with respect to claims 28-35, 37, 38, 40-45, 48-50, 57, 58, and 76 (p. 33, 3rd – 4th para.) that "Yamamoto does not describe "non- procedural image annotation templates each adapted to enable text to be embedded on a medical image". Examiner notes that Goede discloses such use at/on abstract, lines 1 – 6, "a method and system for visually annotating an image. Annotations and notes to images, such as digital medical and healthcare images, may be stored in a structured vector representation alongside image information in a single, non-volatile and portable file or in a separate file from the image".

Conclusion

15. Examiner, in light of the above submission maintains the previous rejections. Accordingly, **THIS ACTION IS MADE FINAL**. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

16. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Correspondence Information

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Evral Bodden whose telephone number is 571-272-3455. The examiner can normally be reached on Monday to Friday, 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Dam can be reached on 571-272-3695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Evral Bodden/

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